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MENTAL ADJUSTMENTS

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BY

FREDERIC LYMAN WELLS

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TO

C. M. C.

PREFACE

A schoolboy defined the United States Constitution as that part at the end of the book which nobody reads. The preface takes a similar rôle at a book's beginning. But a preface embodies the effect of writing the book, and it is a paltry work that does not leave its author wiser than it found him.

Dynamic psychology describes the conduct of mind from the standpoint of its adjustment to the world we live in. It is the most truly cultural study. It is founded on the motto of Socrates; its aim is to give one the most insight into his own and others' behavior. To the individual, better self-understanding means better self-control, and wiser ordering of one's actions along the normal paths of happiness. And in thus appreciating the common factors in human nature, one is made more sensible of an underlying brotherhood with one's fellow men. Familiarity may breed contempt, but it is worth remembering that it was the fox in whom contempt was bred. As Goethe reminds us, men despise rather that which they do not understand. A chemist does not despise the elements, nor an astronomer the stars.

The chief business of a book of knowledge, above all a psychological book, is not to tell us things, but to enable us to see for ourselves what we would otherwise miss. A lover of birds studies the notes and color plates in books not for their own interest, but to help him recognize birds in the field. The proper way to study mankind is by way of man; what we learn from books must be confirmed or corrected in our own experience before it has any real meaning. Every good novel or good drama is good psychology be-

cause it shows how real people differ in their ways of meeting life's situations. Any book that gives us ideas of this kind can add to our psychological knowledge.

This book owes much to Frazer through "The Golden Bough," and to Sumner through the "Folkways." Other citations are given in place. But the greatest obligations are to those who made it possible to assimilate these works and to make the "strategic regrouping" of their ideas for the present purpose. This is due chiefly to my associations with Macfie Campbell, August Hoch and Charles Lambert. I am indebted for certain clinical notes also to Dr. G. S. Amden; and to Professors Woodworth and Dodge for valued criticism at various points in the work.*

F. Lyman Wells.

Waverley, Mass.,
March 23, 1917.

*Whoever writes a volume of the present kind has occasion to test a number of psychological concepts. Those to which I would more especially ask my colleagues' attention are *affective symbolism, dissociative symbolism, affective siphoning,* the wider significance given to *trend,* the distinction between *awareness* (a narrower) and *consciousness* (a wider) term, and the widened concept of *dissociation* (suggested in Hart). These are at least not trite, and have stood well such a test in use as this volume could give them.

LIST OF TITLES ABBREVIATED IN FOOTNOTES

D. psa. Met., Pfister, Die psychanalytische Methode, Leipzig and Berlin, 1913.
Maj. Sympt., Janet, The Major Symptoms of Hysteria, Macmillan, 1907.
Path. A. Rel., Josiah Moses, Pathological Aspects of Religions, Worcester, 1906.
Unc., Prince, The Unconscious, Macmillan, 1914.

INTRODUCTION

Under a convergent variety of interests the concept of mental adjustment has assumed a larger significance and new aspects. Dr. Wells undertakes to interpret and organize the material from which insight has resulted. The fundamental biological conception of adapted conduct, as that conforming to and advancing the welfare of the individual and the race, remains. The increasing understanding of the psychical factor changes the view of the mechanisms by which such adaptation is reached in human lives. It is a complicated matter to make individuals happy, the more complicated the individual and the more complicated the circumstances that control, the greater the complexity of adjustment. The complexity is not alone of the economic and social forces that demand recognition and the types of efficiencies which the struggle for existence thus remodeled enforces; it is also in the inner adjustment of ideas and ideals imposed by the complex structure of the world of belief and by the world of morals through which its edicts are enforced. The simpler biological satisfactions persist. Man cannot renounce his nature without paying the penalty. Modern psychology, while retaining the status of discipline, declines to accept renunciation as a solution. Life remains a struggle and a conflict. But the manner of its conduct is profoundly altered; the machine gun contrasted with the bow and arrow involves no larger a reconstruction than that of the mental life required by the change from primitive to present-day situations.

The science of happiness is the most intricate of human pursuits. It is to this study that Dr. Wells makes a significant contribution. As a pioneer, he blazes his trail; oth-

ers will be guided by his route, though the future highways may diverge from his triangulations. His conclusions yield a significant picture. Central in the composition stands that complex of forces imposed by nature, embodied in the functions of sex, and from that focus radiating to all the expressions of human energy, desire, will, conduct. To consider the manifestations of sex so insistently and unreservedly may seem to many unused to this perspective an unseemly intrusion, or an unworthy degradation. The *libido* plays with the human will, mocks at its attempts to escape its bonds, and through the exponent of science reveals the true significance of the mind's expressions. For the unreserve there can be and need be no other justification than the necessity of facing the facts; if the position can be established, the adjustment to it is itself an obligation. The substitution in any measure of an unreal for a real world is precisely one of the dangers which the thesis of the volume points out. But inherently there is neither degradation nor despair. The life of ideals of spiritual adjustment is as fully recognized as a human need, growing with the advance of culture, as any other — for those competent to enter into the kingdom, more than any other. The complexities of happiness, the steadying and illumination of conduct by conceptions of purpose, demand recognition; that the needs of the spirit demand the castigation of the flesh is denied.

The volume moves toward a definite position in regard to the control and expression of vital trends. Such a position has a direct bearing upon ethics and education and all the regulative systems that distinguish between good and bad, between the more and less desirable. For adjustment implies value, indeed sets the standard of value. Dr. Wells attempts an analysis of the source of such standards, and an appraisal of their worth and fitness for the life that we of today must attain. With the task thus set, his procedure naturally is concerned with orderly unfoldment and presenta-

tion of detail. Beginning with the biological relations, he promptly introduces the mental factor, and presents the mind and its products as an instrument of adjustment. The use and waste of the mental trends is his theme. Right thinking is the indispensable requisite of right action. The mind's privilege is at once its power and its danger. The substitution of thoughts for realities takes us back to primitive man and the unschooled habits of his mind, to magic and superstition; it takes us collaterally to the breakdown of mind in the forms of insanity, in which the distinction of fact and fancy fades. The mechanisms of the process are absorbing. The scope of symbolism is important and receives a chapter to itself. Humor, rhetoric, magic, dreams, delusion, reflect the force at work — a common habit with vastly different outcomes.

Difficulties and failures of adjustment furnish the basis for the more elaborate analyses. No life proceeds evenly without disturbance. Conflict of trends is inevitable. But many of these are of our own making. Man sets up his resistances; there is no more characteristic human product than the taboo. Restraint without repression is the difficult thing. Dr. Wells has much to offer on the intellectual side to show the community of the process by which false adjustments of the abnormal proceed and those that are responsible for the lesser failures. Here particularly the sex theme enters. The repressed or buried eroticism finds an abnormal vent. The mind loses, or fails to attain its unity of expression, its concordant development, and fragments break away in dissociated functions. The house is divided; conflicting and rival and disintegrating personalities may develop. The study of these forms a part of the argument; they express the risks that are run. Along with the abnormal, the experimental approaches to the problem are considered. The nature of intelligence and the modes of testing it; the scope and significance of individual differences;

the newer methods of attacking the higher judging processes in terms of which adjustment proceeds: these are included in the survey.

The reader will pursue the volume with two increasing convictions. The first is that the emotional life is far more central in human regulation than we are wont to recognize. Happiness is an emotional state; and the mind's finer intellectual resources are but ways of attaining grades and shades of content that transcend the simpler, lesser modes, "vacant of our glorious gains." By reason of the deeper rooting of the emotional life in the vital sources of energy, is its adjustment at once dependent upon the integrity of primitive satisfactions; it likewise pervades all derivative expressions of longing and satisfaction. Human nature, as it transcends, must also incorporate. The other conviction is similar to it: that beliefs, tendencies, inclinations, however intellectually expressed, are more complex than cold, objective ideas. Optimism or pessimism is more a temperament than a conviction. In fact, and this is the closing theme of the book, much of the mind's energy is to be understood as balancing material for imperfectly satisfied trends. Failing of one satisfaction, we seek another. Or, with the energy originally derived from one need but not there absorbed, we employ it to the gain of newer satisfactions and the profit of the world and ourselves. Never do we escape from the system, never do we lose contact with the source from which all blessings — and by their abuse, all evils — flow.

So large a theme is capable of varied presentation. Dr. Wells reflects his professional interest in the disqualifications and liabilities of the abnormal mind; his training is equally adequate in the study of experimental problems among the normal. Each reënforces the other and gives to his conclusions an added value. The work should find its place as an aid to the general reader, as a guide to the psychological student, whatever his practical interests or his professional

purpose may be. Ideas irregularly scattered through the technical literature are here brought together, with much original interpretation, into a consistent whole.

JOSEPH JASTROW.

University of Wisconsin,
Madison, Wisconsin,
March, 1917.

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MENTAL ADJUSTMENTS

CHAPTER I

MENTAL ADAPTATION

EVERY living thing, in order to live, must behave toward the outer world in more or less restricted ways. The simple bit of living substance that we call the amœba is endowed with only a few of these modes of response. It can move by extending its "false feet" in a given direction. When it meets a particle of food it must spread itself out over it to consume it; when it meets an injurious substance it must roll itself into a ball and thus offer the least surface. By such behavior, or reactions, the animal and its kind survive; the reactions described are well adapted for that individual and its environment. An amœba that rolled itself up on touching food, or one that spread itself out over poison, would show a condition quite similar to those disorders of conduct that, in human beings, are called insanity. It would be unable to look after itself, and, in the absence of care by its fellow-creatures, would perish. Life depends upon adapted behavior.

Organisms higher in the scale of evolution have much more numerous and complicated ways of reaction in life. They build snares that catch their food, they escape the uncertainties of the chase by vegetable supplies which

they can control, they lay aside stores of food for times of scarcity, or for their young. They conceal themselves when their enemies are about, they build shelters, they form social systems, and a marvelous complexity of reaction develops about the reproductive instincts.

We understand that, in the progress of evolution, different structures are developed which are adapted to the animal's purposes. Of this the protective mimicry among insects affords some of the most exquisite examples. Similarly, different abilities for reacting develop which better meet the demands of the outside world. The dragon fly builds no house at all, the mud dauber wasp but an unsightly affair; the honeybee builds an architectural habitat. History is the record of the modification of behavior in the human race. Leander swam the Hellespont; his descendants fly it.

The adaptations that animals must make have a threefold division; the search for food, the lookout for enemies, and the continuance of the species. To whatever extent the animal reacts in ways to achieve these ends, the organism's behavior is well adapted to its environment, or well balanced. The orb weaving spider must not come down into its net before it is too dark for the wasp to fly; the tiger must not be too slow in seizing, or too impatient in awaiting, the deer that comes to drink. These would be ineffective carrying out of reactions in themselves suitable. But nature so orders that actions which are good for one of the animal's interests may be bad for another. The brook trout incautiously pursuing the minnow is set upon and devoured by the pickerel. The spiderling that loves not wisely but too well is seized and eaten by the object of his unwelcome devotion. And when the wolf keeps cautiously

approaching the bait in the trap and again drawing away on perceiving the suspicious scent he shows in simplest form the never-ending *conflict* of instinctive trends, which plays a comprehensive part in life, and which in human beings is the source of the perplexity of right action.

With the right action determined, the best adaptation lies in its most effective accomplishment. How effectively a given "right thing" can be done is clearly not inaccessible to experimental study. The main structure of comparative or animal psychology considers such problems. We place the animal in a situation to which it must react in a certain way to get its food. The difficulty of this situation, and the factors that enter into it, may be varied within wide limits. We observe whether the animal can learn to locate its food by going to the right or left, by going where a certain light or color is shown, by finding its way through a maze or by opening a box; and we can measure how long it takes to learn to make these adaptations, as well as how many and what sorts of mistakes are made. The comparative psychologist tries to find out to how complex and what kind of situations the animal can adapt itself, and how much its behavior can be modified to make adaptations to strange and novel surroundings.

Only a small part of human psychology has dealt with such problems. They are included in the "choice-reaction" experiments. The subject is told to do one thing when he gets one sort of stimulus, and another thing when he gets another sort of stimulus. For example, he is to tap with his first finger when he sees a red light, with his second finger when he sees a blue light, with his third finger when he sees a green light,

etc. In such reactions mistakes will occur now and then, just as in typewriting one strikes a wrong key occasionally although knowing perfectly well which is the right key. These " false reactions " are failures of adaptation to the circumstances, just as it is a failure of adaptation when the animal looks for its food in the green compartment when it is being trained to look for it in the red. The purpose of these experiments is to create situations which call for different sorts of movements, and by measuring the quickness with which the subject acquires these proper movements, and the number of false movements made, to judge of his adaptive capacity to the situations. Every sort of human perception, from color sense to moral sense, may thus be dealt with, but we meet a certain difficulty when we would interpret these observations as directly as they may be interpreted in the case of animals.

The comparative psychologist often deplores the artificiality of the conditions to which he has to subject his animals. Yet, how much closer to nature they are in comparison with the conditions in the laboratory where human subjects are tested! No such direct and primal motives are likely to enter into our psychological experiments as the animal's quest for food. To get near these we must go to Nature's laboratory, and observe her experimental studies of our struggle for existence. If the hunter misses his game he misses his dinner, but the psychologist who strikes the right-hand telegraph key when he should have struck the left merely makes a dot in the wrong place on the ribbon record. The difference between the adaptations of life and those of the laboratory is just the difference between shooting for a livelihood and shooting at a target. A good " game-

shot" will ordinarily be a fair "target-shot," but a fine "target-shot" may be a poor "game-shot."

Up to this point we have thought of adaptation entirely in terms of behavior and conduct, thus emphasizing in every case the motor reaction to the outside world. This is necessary in order to give the best definitions of good and bad adaptations, since it is in these objective instances that the good or bad result of the adaptation is most immediately evident. We are now ready to shift our viewpoint and approach the focus of our subject. We all know what a chemical reaction is, as the change of zinc and hydrochloric acid into zinc chloride and hydrogen; we know what a physiological reaction is, as the contraction of the frog's muscle to the stimulus of the electric current. Similarly we define our highest types of voluntary behavior as reactions for which the antecedent situation is conceived as the stimulus. But it is plain — and also essential — that the movement or behavior observed in such a process is very far from implying the sum total of what happens in us. If John hears that his absent friend James has received a distinguished honor, his only outward and visible reaction may be to write him a letter of congratulation; but his total response to the news contains a vast number of mental associations — images of his friend and the circumstances of his good fortune, pleasure that James' qualities have brought a well earned recognition, jealousy that he did not get it himself, etc. With nearly all these factors we can deal only as activities of the mind. But they are just as much reactions to the event as the writing of the letter. They may not be involved with any direct motor reaction. Thus our sympathies in the European war, our opinions about Japanese exclusion or

woman suffrage, represent our mental reactions to these propositions, whether or not they have produced any characteristic reaction in our conduct. All mental process is simply mental reaction to what has gone before; and these mental reactions, equally with motor reactions, are good or bad according as they contribute to the advancement or detriment of the organism. Generally speaking, sincere pleasure at his friend's good fortune would be a good reaction on John's part. Jealousy, a feeling that he himself deserved it more, a "what's the use of trying" attitude, would be a distinctly bad mental reaction.

Comparative psychology can deal with the mental processes of animals only by inference from their movements; and it is fair to assume that the animal processes are so much simpler than ours that the behavior criterion is adequate. But ordinary good sense tells us what a treacherous guide visible human reactions are to the motives, real or pretended, that lie behind them, and what grievous mistakes would be made, and often are made, in attempting to act upon inference from them. Most thoughts have no immediate and unequivocal motor expression that can be observed.

A great philosopher asks us to suppose that our whole being and all that existence means to us is dependent upon our some day winning or losing a game of chess. Is it not likely that we should spend considerable time in learning the commoner opening gambits and endgames, in studying the games of other players, and in the solution of problems? What should we think of parents or educators who allowed their charges to grow up without teaching them that a rook is more valuable than a knight, or that a pawn becomes a queen upon reaching the eighth

row? Yet the worth of existence depends on success in a game infinitely more complicated than that of chess, in which no mistake is ever overlooked and no move ever taken back, and where knowledge from one's own experience often comes too late for use.

Our moves in this game are the reactions by which we seek to adapt ourselves to the play around us, and many of the essential reactions are in the form of mental responses. Some persons play this game well, others poorly; some, like the feeble-minded, so poorly that they cannot play it by themselves at all. A "dynamic psychology" brings these reactions together as processes of adaptation, with particular reference to the value of the experience: whether the adaptation is good or bad for the individual. Many mental reactions are bad because they seek to meet material wants by a mental path, which indeed is easier, but as futile as to seek to escape starvation by simply imagining food. Yet exactly such attitudes and bad ways of reacting to situations in life often result from being misled about the real nature of the reactions, and the particular dangers that underlie them. The control of the external forces of nature means to gain more insight into their principles and an ability to act more intelligently in accord with them. Thus is the best control over personalities obtained — by an open understanding of the forces to which they are subject. Plain living and high thinking is an ideal; but high living and *plain* thinking is another, that is not to be despised.

There are certain things which every animal, from amœba to man, tries to get; when we see an animal trying to get a thing, we infer that is something the animal wants. The harder the animal tries to get it, the more it

is apparent that the animal wants it. So far as we can gather, animal wants are regularly pursued to their realization except where external factors prevent it; also there is probably no human obstacle that does not yield to a strong enough human will. But human ambitions and desires are much less elementary and more crossed or interfered with by opposing internal trends. We may want a thing, but it may necessitate our giving up something else that we want to keep; or we may dislike to face the inconveniences, the hardships, the dangers, that are the cost of securing it. All this makes our striving for it less effective, perhaps so much so that it becomes impossible for us to satisfy the desire. To situations like this, which are very common, the mind has definite ways of adapting itself.

There is no better way of showing the principle of such reactions than by enlarging somewhat upon that sterling and classical illustration of mental adaptation to an impossible wish, which is the theme of the parable of the fox and the grapes. My colleague, Dr. A. A. Brill, would doubtless have made this fox an only child, who by flattery and adulation had been persuaded that he was an individual of distinctively superior worth and ability. His self-love not tolerating the admission that he could not reach the grapes, he made the mental adaptation to his failure by taking the attitude that they were sour, and not worth reaching; there was thus no admission of weakness in the failure to get them. But soon he comes to a similar bunch of grapes that hangs within an inch of his nose. "These are just the same," he reflects; "if I took these, people might think I lied when I said the others were sour. I am no liar, but always consistent, and true to myself." When at length the pangs of

hunger force him to take the grapes, they are spoiled, and give him well earned indigestion.

This first type of adaptation to an unattainable desire consists in denying its existence, and minimizing the value of the thing desired. It is a bad type of adaptation because the wish is genuine nevertheless, and the false attitude makes it much harder to meet any future situation in which the wish could and should be realized.

A second type of adaptation concedes the value of the end desired, but, in the absence of strength or unified will to attain it directly, meets it by imagining a realization. These reactions are much more complex than the mere denial of the wish, and their essentially mental quality is distinctive. The daydream is the most common example. Here a genuine pleasure is obtained from picturing the trend as realized, though the sense that it is not so is preserved, and the subject does not act as if it were realized. Mental disease, however, shows instances in which these fancies become uncontrolled so that they seem to be real; — they are called "wish-fulfilling deliria." These are evident substitutions of imagination for reality, which need only be mentioned to be understood. Just as many of us can call to mind music or natural scenery in ways that give us pleasure, so it is pleasant to create for ourselves images of the more complex events and surroundings that represent our ambitions and our hopes.

The stock of imagination that we get from our own experience is powerfully reinforced by the things which other people imagine for us, and put at our disposal in the form of literature. We read novels for entertainment, and the source of that entertainment is that the stories depict, or at least culminate in, situations in which we should like to find ourselves. The small boy likes

his "Monte Cristo" because it supplies him with the material to identify himself with a great and powerful personage such as he would like to be. A novel or similar imaginative production holds our interest, "grips" us, in so far as it suggests to us persons or episodes that we would like to be, have or experience. This is not altered by the fact that these likings are not necessarily clearly understood.

Thoughts of pleasant things, things that meet the normal trends of our organism, are normally pleasant thoughts — thoughts that we like and encourage. But that is not always the case; there is a definite state of mind in which it is unpleasant and even painful to contemplate brightness or happiness elsewhere. The sufferer from melancholia draws his shutters tight upon the cloudless day that he may not behold the smiling face of nature. A young man of inferior constitution frankly admits that he cannot read love stories because they bring too near home to him his own failures in this regard. In such situations the mind shuns the imagination of normal human happiness, and seeks a solution amid fancies of tragedy and suffering. Another type of imaginative reaction still presents an abnormal solution of our trends; but instead of ending in tragedy, it works out a happy solution through situations that are often equally remote from reality. Apt illustrations of both reactions may be found in the stories of Edgar Allan Poe. The depressive or tragic reaction is exemplified in such imaginative situations as "The Fall of the House of Usher," or "The Pit and the Pendulum"; the opposite is seen in such fancies as "Eleonora," "Ligeia," or "The Domain of Arnheim." "The Assignation" has elements of both types.

The free imagination of wished-for things results well for the mind through painting in more glowing colors the excellence of what is wished for, and firing the ambition to strive for it the more intensely. In Miss Bryant's novel, little *Jim Hibbault* trudged along by the side of his exhausted and self-immolated mother: "I'll make roads when I'm big," he told her, "real good ones that you can walk on easy"—"A vision of countless toiling human beings traveling on his roads all down the coming ages, knowing them for good roads, and praising the maker." And such roads we know he did build, not only for people's feet, but for their lives. No possession is more precious than the power to create such visions, so long as it gives stimulus for putting them into action. But the case is not always so fortunate.

Physics teaches that if a substance be subjected to different forces, such as temperature or pressure, "critical points" are reached, that is, points above and below which the properties of the substances are greatly different. Water has critical points at 32°, where it freezes, or 212° Fahrenheit, where it changes into steam. Imagination acts similarly upon character. It has a critical point where we cease to be fired by the imagination, but drop back upon it alone. Poets have sung the mental delights that may come from nothing but imagery; what is equally important is that imagination carries with it no dependence upon, or responsibility to, the external world. It is never kept late at its office, and runs up no bills.

This fact, that daydreams are not continually confronted with experience, makes it possible for them to take on forms that do not fit the actual conditions of one's life.

Those as yet without appreciation of the actual values of life can in earlier years build up ambitions whose satisfaction would never bring satisfaction with life. Such false attitudes make it harder to act in ways that bring a good adjustment to life. Thus, nearly all younger persons indulge in imaginations of their future households, and yet the more elaborate and fixed these become in the mind, the more difficult, perhaps impossible, such ideas can make it for the individual to know and attain genuine solutions when they present themselves.

The voluntary movements that we make we regard as indeed "voluntary"; that is, we feel that we acted so because we judged it best so to act, and that we could have acted otherwise if we had so chosen. So deep-rooted is this feeling of the freedom of our actions, that its loss becomes a conspicuous symptom of mental disease; the symptom is referred to as "ideas of influence," or the "feeling of passivity." This feeling of the independence or control of our actions seems closely associated with, is perhaps the cause of, another very prominent mental fact, namely, a feeling of motive for our actions. Since we control our actions, we want them to have a reasonable motive; man calls himself a rational animal, one guided by reason in his conduct. Our actions thus demand a specific mental adaptation, namely, the assignment of satisfactory motives for them.

The process by which we derive these satisfactory motives is known as *rationalization;* to rationalize an act means to assign a reason for it. The first thing to note about rationalization — wherein it differs, as night from day, from genuine reasoning controlled by experience — is that it is personal and subjective. John tells us that he threw up his job because his chief did not treat him

fairly; but James, whom the chief treated in quite the same manner, does not feel unjustly dealt with. John's rationalization does not give the real cause, which lies in a difference of personality between John and James. James says he does not marry because his income is only twenty-five hundred dollars a year, but most people marry on far less. We must always seek the ultimate motive, and ask why that reason is so effective with this particular person.

Our rationalizations give a motive which our personality will accept as a fitting one without giving the real cause of our actions. Now the real motives for our conduct often go back to fundamental trends which we have been taught to regard as degraded; we believe that we are base if we act from such motives; our acts are thus rationalized in the name of some other principle that we have been taught to respect. If our neighbor insults us, we strike him, not because we are angry, but because our honor demands it; we refrain from doing so, not because we are afraid, but because it would lower our dignity. "How can sin be sin," asks one philosopher, "if through it I rise to spiritual heights before unknown?" Such are our mental adjustments to whatever conduct our pugnacity or our temptations may occasion, just as the fox rationalized his attitude toward the grapes by assuming that they were sour.

Where our impulses are sufficiently strong and united, rationalizations play a small rôle, and may scarcely be thought of unless a reason is demanded. "I want to do this, I don't need any reason for it," speaks the voice of sincerity, self-assured. Rationalizations play their special parts in justifying an uncertain intention and in supporting an impulse against counter-impulses that are

themselves strong enough to block it. The more dependent we feel upon the need of rationalizing an act, the more certainly are powerful influences in the personality opposed to it, and the falser the rationalization is likely to be. It is natural that the same reasons fail to move us at other times and under other circumstances. He who tries to be true to his rationalizations may become a traitor to himself. He is like a man riding a bicycle, who inclines his machine in one direction when his natural leaning is toward the other. The test of character is the firm adherence to standards of action: what things must be done and what things are not to be done, and this in defiance of the rationalizations that may be present to oppose these principles. The subtlest temptation to evil is just that which comes disguised as rationalization of the unworthy impulse. The real conflicts of the soul are not between good and evil, but between rationalized good and what is truly right. So did the Indian mother throw her child into the Ganges, and, as a widow, burn herself on her husband's pyre, rationalizing these acts as religious duties; so did many ancients rationalize the slaughter in sacrifice of useful animals and even of their fellow men. We have learned to realize the inappropriateness of such conduct, though we still rationalize a value into the sacrifice of many vital personal aspirations.

Of course we apply rationalization not only to our acts but also to our opinions and points of view. We manufacture or acquire reasons for our likes and dislikes, and even more commonly for our approvals and disapprovals. If a scientific investigator puts forward a result or a doctrine which is distasteful to us personally because it shows us in an unpleasant light to ourselves, or

because we secretly feel the contribution superior to what we ourselves could have made, we are prejudiced against the proposal. The office of rationalization is to discredit this work to our intellects. Not the least of the obstacles to psychological progress is that to be practical it has to be personal, and in being so it encounters a host of instinctive prejudices difficult to deal with because so well concealed from their holders. A proper representative of psychological science must be able not only to tell the truth to his own disadvantage, but also to accomplish the harder task of believing it.

Rationalizations of thought or conduct in terms of moral principle are precisely the function of the so-called "elastic conscience." Religion, indeed, whose purpose is to make people better, may be made to rationalize infamous actions. Comprehensive instances are the torture of heretics, and the execution of witches. These are the work of "cave-keeping" faults of human nature which borrowed from religion the convenient disguise of an act of faith.

In short, the object that rationalization serves is to provide the feeling of moral and logical justification for our acts and thoughts, to supplement our feeling of their freedom, and to keep us at temporary peace with our own natures. Enough instances have probably been quoted to show that the ability to rationalize an act is a slight guarantee of its real moral or logical value. Life is built of the effects we produce, not of the motives we make believe.

The most important and coherent system of adaptive mental reactions that humanity has developed is that of religion. The primitive attempts were simple, as were perhaps the minds whose needs they met: a conception of

how the world arose, of the interference of supernatural forces in the world's affairs, of some existence after death: these were formulated, and the mind was satisfied. Religion has always served an important social purpose, in giving to a people a sense of solidarity, a faith in their common cause, contributing to victory in conflict. This, as Karl Pearson points out, gives them great advantage over people not bound together by any such ties. Natural selection would thus develop a humanity with some degree of religious evolution, quite apart from the supreme value of religion for the individual. But as individual life becomes more complex and fraught with difficulties more keenly felt, the mind demands, and supplies, a religion that will meet its difficulties in a more personal way. We must appreciate that there are two sorts of these difficulties; one of the simple impossibility of realizing the conditions of normal human happiness, which are nevertheless desired and striven for; the other the negation of these conditions, which supplants them by abnormal ideals. Religion has its compensation for the first of these difficulties, but not for the second. The losing that is true dying is not the loss of the object of value, but the loss of the sense and impulse of its value. The belief in immortality is the response of the human mind to the wish for further good things it has learned to know on earth; for a continued spending of our energies, or a meeting again with loved ones. The individual, though failing of the good things of life here, has not lost the sense of their value, but wants another chance at them. If one denies the values of life, and tries to live it in ways in which it is not meant to be worth living, this faith loses all its sustaining power. Rationalizations aside, the persistence of this belief be-

tokens in general — not in every one — a better adaptation to life than the loss of it. Further stimuli to religion are the sufferings of those dear to us when we can do nothing to help. Powerful religious impulses, as in the form of prayer, spring up at such times, which may be quite in contrast to one's ordinary habits of thought. Again, we make our own sufferings more tolerable; we identify them with a cause in which others have suffered far more. Are we not frankly told that the Christian life is "many a sorrow, many a labor, many a tear," but that it brings ultimate triumph, "sorrow vanquished, labor ended, Jordan passed"? What awaits him "who best can drink his cup of woe, triumphant over pain"? By the values thus gained we develop the endurance of hardship, resistance to temptation, capacity for sacrifice and for effort in the face of discouragement, which make religion the greatest human force in the control of conduct.

A large share of human happiness depends on the fitness of sexual adaptations; most of the wreckage of human happiness is strewn upon the reefs with which human impulses surround them. The normal adjustment of this trend in a regulated life is in marriage, in which a man and a woman administer a household and rear children. Whatever makes this adaptation easier and better is good, whatever makes it worse or more difficult is bad. Instinct left to itself regularly takes care of itself; but complex adjustments to the requirements of a social order must safeguard instincts in the interests of these requirements. There is a general principle — a phase of the law of inhibition of instinct by habit — that it is bad for any instinct to adopt partial responses which at some point must be frustrated. Such response de-

velops, perhaps unconsciously, a habit of stopping short which renders more difficult, when the time comes, the completion of the action. This law has its chief human application in the erotic sphere. Thus it is well known that self-indulgence in the more pronounced reactions of flirtation may impair the capacity for the deeper attachments required in marriage, without which one does not make in a whole-hearted way the sacrifices that marriage involves. There are bigger fish in the sea than ever were caught, but one does not get big fish if little ones steal the bait. From the educational standpoint, it is wiser to teach this self-control on the basis of health and proper care of oneself, than because the indulgence has some vaguely immoral quality. One refrains from spending every night at the theater, or from drinking a dozen glasses of good punch at a reception, and from other things that one admittedly would thoroughly enjoy doing, when one realizes that these indulgences are not good, that they make one feel less fit for more important things.

It appears that just as people differ decidedly in the amount of alcohol that they can take with impunity, so others are much more unfavorably affected by frustrated erotic reactions. If the problem is simply one of elimination, the proper conduct of life is relatively definite and easy. Some people are so fortunate that they step from an apparently extreme inhibition of these reactions to a normal adaptation in love and marriage. But others who follow this course illustrate, to their cost, that the inhibition of instinct by habit, like other good rules, is one that works in all sorts of ways. The instinct that leads toward sexual reactions does not originally have the fixed tendency that it acquires in normal adult existence,

but in earlier years is exceedingly subject to distortion; there are indeed few things in life to which it cannot attach itself. If a dead wall of repression is built across the development of this trend, it does not accumulate a great reservoir of energy for use at the proper time; rather it blocks the proper course of a trend which knows how to cut many other channels. It is important, therefore, to have in life some positive influences which will develop a healthy type of sex consciousness. Good personalities do not avoid, but take special pleasure in, various activities when they are shared in mixed company. The essential condition of the healthiness of these reactions is that they be accompanied by bodily activity, especially of large muscle groups. Dancing is the natural prototype of these, if not their best example. A greater value in this respect attaches to more active things, such as tennis, boating, swimming, various forms of the "wild life," and many other, in themselves good, bodily recreations in which men and women meet upon terms of common or competitive effort. Dr. Brill contributes an interesting sidelight upon this principle. He obtained accounts from many persons in regard to the mental effects of some of the new dances, and found that grosser erotic feelings are more frequently evoked by watching them than by participating in them and thus securing the outlet of bodily reaction.

Attitude and conduct in this sphere are strongly subject to the influence of surroundings. It is the soundest of observations that example is better than precept, and precept better than instruction. In fact, the strongest argument against the so-called campaign of enlightenment in these matters has been that mere information is of so little value in governing conduct. One may well

know wherein healthy character consists, but the best use of such knowledge is to keep one in the society of those of strong character.

Another consideration applies especially in environments which invite the intellectual over-refinement of erotic feelings. Good personalities react to this trend not merely as an instrument of pleasure, nor simply to meet its primary biological purpose, but attach essential value to both these phases. Of the thousand rationalizations of unhappy marriage, every one may originate on a physiological level. Neurosis, alcohol and the divorce courts wait on those who try to circumvent this fact.

Where the adaptation of marriage is not made, or is poorly made, this may be ascribed partly to the nonoccurrence of external opportunities for it, but very largely also to the internal resistances which are developed in the many ways already mentioned. Though possibilities of adequate adaptation present themselves, they go unrecognized or unreacted to; or if an attempt is made to meet them, it is so weak that it is bound to fail. In these cases, where personal resistances have played the important rôle, there results, in general, a defective adaptation to life itself, with more or less well concealed embitterment at the failure. To the absence of a normal possibility for adequate adjustment, individuals can adapt themselves quite as wholesomely as to the more usual situation, and thus live careers of conspicuous social value. Good personalities overcome the difficulty by free recognition and open acceptance. The effective means to such end is the development of strong external interests to prevent the withdrawal into self, by any form of direct service to society, by the pursuit of idealized ambitions, and thus —

like the ancient Epicureans — by cultivating the mental luxuries of life, boldly to dispense with its necessities.

It is a property of human reactions that the feeling originally attaching to one set of impressions or reactions may be *transferred* to another that stands in some association with it. This association may be very superficial, as, when having much enjoyed a play at a certain theater, one looks forward with pleasure to going to that theater again, though the play and company are different. Again, the association may be very obscure, as it is in the symptoms of certain mental diseases. Associations come to mean much more to us subjectively than they do objectively, through our special experiences in connection with them and our elaborations of them. This principle plays a great part in mental adaptation. The mind can endow certain thoughts and actions with an extreme value — that is, idealize them. One man tries to build as good an automobile as he can; another tries to make himself as good a chess player as possible; another finds his ambitions in knowing the most about Shakespeare; another tries to be the most skillful bricklayer. Practically anything may be idealized so that it compensates for the loss of all else, and all else is sacrificed to it. The striking thing about these ideals is that while some are of great value for one's relation to the external world and others of practically none, to the person who holds them the latter mean at least as much as the former. In itself it means no more to the surgeon to set a difficult fracture than it does to the Assyriologist to decipher a neglected cuneiform. It can well mean less, for the surgeon earns large sums for repairing injured bodies, while the value of deciphering the inscription depends almost entirely on the subjective enthusiasm of the scholar.

Our minds of themselves give sacredness to ideals, just as they give convincingness to rationalizations.

Where such ideals are developed simply as compensations for the unlived-out portions of the fundamental trends, they serve well their primary purpose of balancing the personality, and may, indeed, play an important part in enabling the trends to be better lived out. The painter's devotion to his art may be of conspicuous economic value to him and his family. Certain influences of rationalization and environment may distort the ideals so that they have no correspondence with the main trends of the personality. An adequate meeting of the fundamental trends requires of the individual some degree of self-assertion to the external world. Active competition for the means of meeting these trends is an essential part of getting them, which makes definite demands upon material effort — willingness to act in the service of others, aggressiveness against the opposed will of others. The things that can be idealized differ widely in the demands that they make. Those of the political and industrial worlds are great, those of the intellectual and æsthetic worlds are relatively small. Rationalization comes to the aid of these latter, to help those personalities "who instinctively crave a refuge from the domineering, refusing, and wheedling of social enterprises in general," to find that refuge in the more passive ideals of this type. The most extreme ideals may thus be formed in directions that have no expression in action, face no test of concrete experience, and whose only satisfaction is self-satisfaction. There are many people whose entire happiness is bought with just such illusions.

A fox, being forced to content himself with sour grapes, fervently declared they were the best grapes he

ever ate. But it would be a sorry proceeding to feed them to the little foxes, and teach them that there were no better things in the world to eat. That education is a traitor to society which teaches or allows it to be thought that the ultimate values of life lie in directions that tend toward satisfaction in self and away from meeting the objective fundamental trends of the larger personality. Subjective ideals may be a fair substitute for reality, but they are a bad preparation for it. Honest people are free to assert that a million dollars is a good thing to have, and that if money becomes sordid and belittles character, it is the fault of the possessor and not that of the million dollars. But suppose that at the hands of poor and dishonest mentors one had been led to think seriously of all money as filthy lucre, the root of all evil, a topic to be mentioned only in suppressed whispers, and with guilty laughter, a motive whose acknowledgment was a confession of turpitude, what would be likely to happen when one's ambitions came to depend upon his economic competence, or if one had a good chance to win the million dollars or something worth a great deal more? Would one so educated and convinced have a firm grasp on his opportunity? Would he make a sound investment of his fortune? Would he be likely to spend the income from it wisely? It is particularly important that those who are responsible for the formation of character in others should withstand every impulse to dissemble personal difficulties or mistakes of adaptation, and should openly appreciate the active, tangible and concretely serviceable ideals that are likely to bring the best adjustments to life in the normal personalities under their influence. The course to an adequate mental adaptation is sometimes stormy, but it is far less devious than the paths by

which people contrive to escape it. Its comprehensive expression is the feeling of being an influence for good. It will be most potent where its results are the most clearly seen, and are the nearest to one's deeper impulses. This is implicit in the erotic trends. The quest of material possessions, which is the human equivalent of the animal's search for food, is again most valuable where those possessions are made a means of service; and the same is true of the entire group of processes that dynamic psychology sums up under the head of "balancing material." It is sometimes thought that the entire concept of effectiveness for good in others has its supreme value for human adaptation precisely because of analogies, more or less remote, to fundamental trends of love.

Most principles of mental adaptation founded on human experience will have more fruitful results the earlier in the life of the individual they can be brought to bear. Oliver Wendell Holmes remarked that the education of a man should begin with his grandfather; eugenics has become a catchword; and the supremacy of heredity will always be a favored belief with those who must make of fatalism a rationalization for do-nothingness. But there is a better practical prospect of getting people to do the best for children that they have, than for guiding the larger actions that may result in having children to educate.

The worst effects of bad heredity often come from the fact that it also means a bad home environment for the child. The hand that rocks the cradle can also plant the seeds of failure and neurosis. They do not necessarily spring from a bad heredity, and they may come upon a good heredity, under a bad environment.

We may assume that no parents would knowingly in-

jure the mental health of their children; yet there is a singular blindness in this respect, that is more than mere lack of judgment. The parents who spoil their child do so in feeding their own self-admiration as parents of that child. If unbounded affection for the child often results in such harm to him, it is because his adaptation to life is not the underlying motive of the affection of his parents, to whom he is essentially an instrument for the living out of a particular group of feelings. They betray him to their own self-love.

One may truly respect a boy of six, who, when asked by his grandmother whether he was not sorry that she had hurt her foot, replied that he had tried to be, but couldn't. There is no easier way to damage a child's character than by artificially stimulating his emotions. It is an evil turn to a child, and an all too frequent one, to teach or allow him to lash himself into emotion because it appears to be the "right way to feel." If we try to act as we feel, we are very apt to act only as we think we should like to feel; it is more honest to judge our feelings by our reactions.

The emotional display of sympathy, in particular, is a thing that is blessed neither to give nor to receive. Those who ridicule our sufferings are better friends to us than those who merely pity them. The underlying cause of such displays is that it is easier to cry over our friend's hurt than to mend it; sympathy may injure the recipient by undermining his self-control, and by leading him to exaggerate his difficulties. Though such conduct is hard in the case of those personally dear to us, it is best to confine one's appreciation of another's suffering, so far as is humanly possible, to doing something objective to lighten it.

Just as that education is of little value which merely teaches *what* without showing *how,* so, in the breaking up of harmful tendencies, the value of education consists, not in showing *what* not to do, but in *how* not to do it. If a drinker is really to give up alcohol, he must not content himself with a great show of repentance, resolution, and pledges, so making a frontal attack with his weakened will upon the strongest temptation his character knows. He must make an honest study of his failing, observe the conditions, the situations, the personal associations under which he tends to yield, and strive in every way to so order his life that he will not be subjected to those conditions; he may thus outflank his enemy, and take him in the rear, where he is least prepared for attack. The most effective and the most sincere way to get rid of any undesirable reaction is to remove the stimulus.

The ideal education should be guided by the motto, "not things to know, but things to do." Let there be an irreducible minimum of precept that is not put to the test of immediate action. The opportunity of the early years to develop motor accomplishments that are of proved value in subsequent life should be developed to the full. The available forms of manual training have a high place in such education. Every boy should be provided with some physical attainment of the combative type, as a discipline for temper, and against whatever situations may demand from him the courage of hostile strength. Swimming is to be valued not simply through its value for self-preservation, but for the discipline of the reflexes that it tests and develops. Dancing should also have an unquestioned place for the development of the incidental social graces, and to pave the way for the growth of a healthy sex-consciousness later on. All these

are quite as fundamental as any phase of book learning.

The healthier the household, the healthier the standards of conduct that are likely to develop naturally. But the individual cannot know enough of life to direct himself intelligently for his adaptations to it in the times when the formation and training of those adaptations must take place. This is the responsibility of those who are going before. They must see to it that the actualities of life burn out all tendencies, however disguised, to the self-love and self-consciousness — different names for the same fundamental thing — which are the great fountainhead of mental maladaptations. They must hold the earlier years firmly to the satisfaction of concrete endeavor, of external result, and train these years to strive in their life work for none but those constructive ideals and values of which older experience — be it that of success or failure — has brought the understanding. Great mistakes are still retrieved by keeping others from making them; and great triumphs perfected by spurring others beyond them.

The desire of Jupiter for the nymph, Thetis, was dispelled by the knowledge that she should bear a son who should surpass his father. Better men than Jupiter are needed to fulfill such a prophecy; and no good man or woman might ask more from life than what this ruler of Olympus feared: to rear children who shall be better than they.

CHAPTER II

USE AND WASTE IN THOUGHT AND CONDUCT

LIVING things are complicated structures that absorb, convert and expend energy. Human beings are the most complicated of them all. A helpful likeness is to those machines which make electrical energy out of that produced by falling water. Just as different streams contribute to make the river by whose fall the electric turbines are driven, so do we derive our bodily energies from different sources, such as air, and various kinds of food. When electricity is made in the dynamo, it is carried away for the performance of a great many tasks; lighting, moving cars, power for manufacturing. Similarly, when our sources of energy have been assimilated into the blood stream, it carries their energy to different organs which perform different parts of the work by which we live. Some of it supplies our muscles, and we carry out motions. Some of it goes to internal glands which make special chemical substances for the body. Some of it operates the processes of digestion. Life is the continual conversion of energy derived in these ways, just as the dynamo converts into electrical power the force derived from the fall of the water.

The energy of the dynamo is not dissipated, but committed to the performance of definite tasks by the wires that conduct it. We do not use electrical energy as such, but for lighting lamps and the like. In the same way,

we do not spend our vital energy as such, in an inchoate, unorganized manner. We spend it through certain channels, into any one of which may flow energy from the great common reservoir. It may be part of an organism's behavior to turn toward a source of light, to lie in wait for prey, to show interest in mathematics. Thus the primordial vital energy is differentiated. Any such differentiation of an organism's vital energy we shall, in this book, speak of as a *trend*. A trend is a specialized portion of vital energy, just as an *organ* is the name for a specialized portion of vital tissue.

Nietzsche remarked that this conversion and expenditure of energy is itself the prime fact of life. To him the adaptation of that energy for the benefit of the living creature is an incidental matter. But, if the energy derived from our dynamo were spent in such ways as lighting little Geissler tubes or operating toy motors, or run through meaningless coils of resistance wire, people would not pay for the operation of the plant, and it would be abandoned. And so, while the expenditure of our energies in any sort of way may meet the definition of life, yet, if we are to go on living, we must spend it in ways that are beneficial to us in our surroundings. The dynamo must operate the community's lights, street cars and factories. We must breathe, eat, drink, work for a living.

Organisms that do not act properly in these respects perish in the course of evolution. We all, therefore, have tendencies to act in certain similar ways. We all seek air, food, drink, sexual partners. Common tendencies like these have been spoken of as *fundamental trends*. We know that tendencies to act in these ways need not be learned, but are inherited from long lines of ancestors

who themselves employed them to their survival. There are different names for different kinds of such trends, or "behavior-patterns," as they may be called. When Paramecium turns away from a bit of salt, the action is called (negative) *tropism*. When the hedgehog curls up at the approach of danger, the action is called an *instinct*. When the leg muscle contracts on the tapping of the kneecap, the action is called a *reflex*. Precise lines between them are difficult to draw,[1] and the distinctions would not greatly help us. Three points are to be noted: first, that life is a conversion and expenditure of energy; second, that this energy is expended in specialized definable ways; third, that these ways are, and in the nature of things must be, very largely of such a character as to be of use to the organism in the struggle for existence.

Since the animal needs food, it develops and preserves patterns of behavior that result in its obtaining food. The spider spins a web, the man works for a wage. Since the individual organism has only a limited span of existence, only those organisms can continue which make use of reproductive functions; hence, the sexual trends. One organism may seek to deprive another of food, or of sexual partnership; hence, the fighting or combative trends. Stronger organisms may seek to destroy another for their own food; hence the trends of flight and concealment. Greater good to individual organisms results if they combine for the common weal; hence the social, coöperative trends that we see so highly developed in bees, ants, and men. Creatures that behaved in accordance with these relations survived; others perished.

Trends that lead thus directly to the advantage of the

[1] *Cf.* von Bechterew, "Objective Psychologie," 20.

individual and the species surely need no other explanation than this. They arise and persist because they are necessary. The question is not so much why we act in accord with fundamental trends, as why we should ever act differently. How is it that sometimes the behavior of an organism does not serve its "will to live"? Is the guiding force of heredity, selection and evolution sometimes inefficient, or sometimes suspended so that we no longer live according to it? And in these cases, is the behavior simply an inchoate dissipation of vital energy escaped from the channels that should control it? Or does such behavior have special properties of its own? In a word, what are the general sources and characteristics of faulty adaptations?

Apart from the human species, the main cause of faulty adaptations does not lie in the failure of the instincts or behavior-patterns as such. Faulty adaptation results because the external situation is an exceptional one. The instincts with which the animal is racially endowed provide no proper response to it. The energy from the dynamo is thrown through the accustomed motor, properly wired. But the motor is now connected to different machinery, or improperly connected with the machinery which it is designed to operate. Gears are jammed, or there is an obstruction among the moving parts. The operation is ineffectual, or even destructive.

The dodos of the Mauritius had no instinct for flight; hence they were promptly exterminated by the men, to whom they were unaccustomed. It is perfectly correct conduct for the pickerel to chase a small bright object flashing through the water, because as a rule it is a little fish, good for food. Only exceptionally is it a trolling spoon. In these cases we have a great change in the sit-

uation confronting the animals, which takes place more quickly than their instincts can meet it by evolution. Either issue means death to the individuals concerned. Yet it is not, so to speak, the animal's "fault"; the animal is acting in strict accordance with behavior-patterns whose fitness was demonstrated by the whole experience of its race. So might a horde of savages rush to death against the hail of machine guns.

The reaction may not be harmful, but simply one which the changed conditions have rendered superfluous for the fundamental trend it served. A well fed house cat will continue to watch for mice, and the sportsman does not kill game for the need of food. Such reactions cannot, strictly speaking, be called "faulty." Those of the sportsman serve another important trend — the preservation of physical vigor.

When the spider consumes the fly it has caught, that represents the final and direct issue of a fundamental trend. But, that this end may be reached, preliminary steps are necessary. The fly, having been caught in the net, must be wrapped; the net must first be spun to catch the fly. The spinning of the net is some steps removed from the satisfaction of the need for something to eat. Now, the spider will not eat an imaginary fly if no fly is there, but it will spin a web where no fly can possibly come. The more of these preliminary steps there are, the greater the possibility that some of the more remote ones will be unadapted to the given situation. Thus, the whole trend may be improperly met, for the spider would not then catch the fly. In the human race, the time and energy spent in the direct approach to organic satisfactions is, indeed, insignificant in comparison with the remote approaches. A man refrains from alcohol that he

may do better work, so that he may earn more money, which will enable him to marry, that he may rear children. And if there be many a slip twixt the cup and the lip, there will be many more between the pay envelope and the cradle of a descendant. A subsidiary factor in making a reaction faulty is thus the remoteness of the reaction from the final satisfaction of its trend.

It is possible thus to understand a certain amount of unadapted human behavior. In days when contests between men depended more upon simple bodily strength than is now the case, anger was useful because it made the strength discharge more vigorously. It has small value when it must be restricted to such externally useless reactions as clenching the fists and teeth; yet it persists. These reactions used to be good for the individual, but are now bad, because time and circumstance have changed. Don Quixote is a psychopath because his behavior is adapted only to an age gone by.

In sum, when we see an unadapted reaction among the lower animals, it generally represents one that has been useful on other occasions, which the animal is not able to distinguish from the present one. Such a reaction is still an attempt to meet the situation in accordance with the will to live. Though misdirected and ineffectual, it is yet a true part of the struggle for existence. If the animal fails, it is simply because its energies and the trends in which they are directed, though normal, were not such as enabled it to meet that situation. Thus it was not the aptest of similes when the novelist compared the weakness of one of his characters to the "tropism of a medusa or plant." The desire of those organisms is unswerving; they have no doubts, fears, or scruples; it is their external force which is slow, feeble, or

blind. Never was lover more constant to his lady than Paramecium to H_2CO_3.

Thus the first great factor in maladjustment is the lack of adaptation to altered conditions. It is naturally one that operates most among animals dependent upon their instincts, whose behavior is not readily modifiable. By definition we should expect less of it among men, for intelligence means precisely the property of so recombining our behavior-patterns as to act better in novel situations.

Among the higher animals, however, there are already indications that the altered situation may not tell the whole story of unadapted behavior. The conventional dog, when his master dies, refuses food, and will not leave the grave, even starving himself to death. If we examined the dog's digestive tract, we should probably find that under the emotion it was not functioning properly, and was not in a position to assimilate food. But there is no strange factor in the surroundings to prevent the taking of food. There was never a time in the history of dogs when it was bad for them to take food on the death of a master. This seems wholly unbiological conduct, perhaps the first instance of its kind that we meet as we ascend the scale of evolution. It is now an internal difficulty that prevents the eating. There is now another trend, an emotional one, which prevents the feeding instinct from expressing itself in action.

When one trend thus opposes another, there ensues a second great source of maladjustment of the reaction, which is spoken of as a mental *conflict*.

A man can meet complex and unfamiliar situations better than a lower animal can, because he has a greater variety of trends and behavior-patterns which he can

bring to bear upon them. He is not bound by the instincts which make the ant so perfect in its place and so helpless outside of it. But this greater number of trends makes possible an interference of one with another in more ways than is the case with the few behavior-patterns of a lower animal. A dog has but to eat the food which is given him, defend himself or his possessions if they are physically threatened, and multiply his kind if the occasion is presented. No one of his trends is likely to cause a more than momentary interference with another of them. A man, on the other hand, must go through a long period of learning artificial principles of conduct to which he must conform. He must bring into conformity with these his means of getting food, shelter, love, offspring. He must strike a balance between his fondness for ease and his ambition for advancement. He must make a choice of sexual partners that will be decided enough to force its attainment against all obstacles or rivals. He must make permanent sacrifices of an independence he ardently desires.

Personal ambition often runs counter to love, honesty to desire for money, etc. A fundamental trend, like that of sexuality, may not be lived out because another trend of the personality is strong enough to block it, or because no choice of a partner is sufficiently decisive. Then a faulty adjustment to life results through mental conflict. Similarly, the dynamo of our illustration must serve the different trends of the community's interest — light, traction, manufacture. The portions of energy devoted to these several uses must be insulated, one from the other. If wires cross, the system will fail.

The Southern boy in "The Perfect Tribute," rushing along the street, collides with President Lincoln. "Do

you want all of the public highway?" he exclaims. "Can't a gentleman from the South even walk in the street without — without . . ." "My boy," replies the President, "the fellow that's interfering with your walking is down inside of you." Thus the *internal* character of the difficulty may least of all be appreciated by the one subject to it. Even the dispassionate observer can more easily surmise the existence of mental conflict than know the trends that are parties to it. The conflict may be manifested simply in the failure to live out a normal trend in the individual's character, in the presence of the usual opportunities for doing so. The great majority of those who do not marry are simply those in whom the trends that lead to marriage are weakest in proportion to the trends that oppose it. Divided love is weak love, and weak love is the only hopeless love. We can see the failure of the fundamental trend: social failure, sexual failure, economic failure. But as the boy did not see what prevented him from walking, so we can seldom see at once the things that beget failure. From whatever source they may come, such vague counter-trends that conflict with or block normal trends of the personality are called *resistances*. A miser has resistances to the normal expenditure of money; a prude has great sexual resistances.

It is plain that not all our trends are equally blocked by such resistances. No one questions the wisdom or moral propriety of breathing, or drinking when one is thirsty. These activities are altogether too necessary. Resistances begin to appear in other trends, where the response is less immediately urgent and definite. Consider, for example, the taking of food. Ellis points out that in some savage tribes the dominant "complex" of modesty

centers not about the sexual trends, but about those connected with eating. We are told that the Bakairi of Central Brazil have no shame about nakedness, but are ashamed to eat in public; they hung their heads in confusion when they saw the explorer (Von den Steinen) innocently eating. Traces of this are not wanting in civilized experience. We are accustomed to take our food in groups, at certain times, and in certain regulated ways. Most people would feel considerable resistance to munching the homemade sandwich in a well filled Pullman car. This would be greatly lessened if a companion were joining in the indulgence, and would disappear entirely if the remaining passengers did so, or the hunger were urgent. And as the dog refuses to eat at the death of his master, so do human beings observe ritual fasts of a cognate but more complex order.

The economic trend, for amassing as much of this world's goods as may be, is blocked by two external factors. These are the competition of rivals, and the legal restrictions imposed by the community. On the other hand, a man's business may not grow because he refuses to take the advantages used by his unscrupulous rivals, or because he lacks their aggressiveness.

And so we find that the sexual trend, that which means less to *individual* existence than air or food, indeed largely restricts its freedom, is the one about which the greatest resistances have arisen. Its internal conflicts are, on the whole, greater than the external difficulties besetting it. The rôle of these conflicts in mental maladaptations is more striking than the conflicts in other trends. This is certainly not because of the greater strength or urgency of the need. The needs for air, food and water make far more coercive demands upon

our conduct. It is because, in proportion to the strength of the need, there is much more difficulty in meeting it. But this difficulty is not external. It is the same as applies to Lincoln's pedestrian encounter. We see the external, organic satisfactions readily obtained by those not inhibited by inner influences to which we give such names as conscience, modesty or fear. The actual blocking trends are usually more instinctive and less near the surface; they are *rationalized,* that is, made explicit and defensible, by giving them the names of conscience, and the like.

In the first instance, human love is not an elementary instinct for the sexual embrace, as hunger is an instinct for eating, or thirst an instinct for drinking. Love must meet a desire for reproduction, a desire for sensory pleasure, a desire for companionship, a desire for mastery, a desire for self-submission, in many cases a need for aptness in domestic accomplishments. A man may be attracted by a woman's beauty and repelled by her manners. A woman may find a man's courage admirable and his coarseness disgusting. It may thus be impossible to gratify one trend of love without sacrificing another.

The need of air is a constant instinct for inhaling gas of a certain sort. Things one likes to eat change more or less, but the changes are generally not hard to meet, nor very great. The sexual trends readily and greatly change their direction, and the change is not so easy to meet as when it occurs in the other trends. What attracts on the dancing floor, in the drawing-room, at the supper table, may disgust on the tennis court, in the kitchen, at the breakfast table. One may have different food on the table, but not so easily a different person at the opposite end of it. Different qualities also attract or

repel men and women according to their stage of development. The same qualities do not command admiration at fourteen, eighteen, twenty-five and thirty-five. Different solutions of life's reactions are accepted at these periods. Foods and climate may not be present in greater variety than possible sexual partners, but they are more easily changed.

Thus there appear three classes of reasons why sexual trends are especially involved in internal conflicts: first, they are less immediately concerned with the individual's survival than the other fundamental trends; second, the proper satisfaction of sexual trends involves an especial range of aims which may be inconsistent with one another; third, these aims are unusually shifting and subject to developmental change.

These are some of the ways in which conflict blocks the normal trends of the organism. The immediate result of the blocking is that the trend is not lived out, and some organic need is not met. The consequences — the ways in which the organism seeks to adapt itself to the failure — must be left for later consideration.

A spider, from which one fly has escaped, does not tear the new web to pieces, but waits patiently for another fly. The angler, from whom a fish has escaped, does not throw away his tackle, but rebaits it and makes further casts. The minor rôle played by such external failures, disappointments and sorrows is in contrast to the great rôle which internal conflicts — opposing trends within the personality — play in the maladjustment of behavior. It is not the whole-hearted lover whom disappointment drives to suicide, but the one to whom the conflict between love of woman and love of self has become intolerable. The "real," objective difficulties do

not of themselves induce faulty psychomotor reactions to the situations they create. Much of O. Henry's literary genius lay in his portrayals of this relation. Normal persons do their best, though their surroundings bring them neither assured nor agreeable food, nor comfortable shelter, nor good sexual adjustments. Humanity has braved greater trials than ever caused despair. It is equally well known that great external possessions do not guarantee contentment or good mental balance. "Although Tommy Merton had everything he wanted, he became fretful and unhappy." Mental balance depends more on knowing what one wants than upon getting it.

Human ingenuity has mainly been concentrated against the external difficulties of existence, to attain the "mastery over nature." The growing intra-psychic conflicts, on the other hand, have not so successfully been dealt with. While man's adjustment to his surroundings is no longer threatened by the tiger of the jungle, it is still destroyed by more insidious forces within himself.

When the dynamo is properly connected, the energy it discharges must proceed along wires, and do its work through motors, coils or lamps. If, however, a circuit were arranged so that the current could discharge without overcoming the resistances opposed by the lamps or motors, it would not travel through them, and they would lie dark and still. Such a circuit robs the machines of the energy needed to perform their tasks. It is known as a "short circuit." The current does not go out to do the work required of it, but takes the "easiest way" of discharge.

We have seen that as the current goes out to its work

through motors, so the living organism must go out to satisfy its vital needs through the chase, the snare, or recompensed labor. But the human mind has a property of presenting desired things to itself somewhat as if they were really there, though actually they are not. A thing presented in this way is called a mental image. If it is especially hard to distinguish from a real thing, or is mistaken for a real thing, it is called a hallucination. Freud believes — with few followers [2] — that the original organism actually hallucinated its needs as satisfied, and only when this imaginary satisfaction failed did it have recourse to seeking the real satisfactions. While this does not seem likely, there is no question that we get from experience the material to construct such images. After such experience, a need might be met either by the "real" "power-circuit" of external reaction, or by the "short-circuit" of imaginal or hallucinatory reaction.

But the animal that hallucinated air would suffocate, and spiritual affinities leave no offspring. Such reactions will be inadequate because they can never meet fundamental organic needs. We see here another chief factor in the waste of vital energy and in the production of inadequate reactions. Such reactions are produced by a basal tendency of organisms to seek pleasant experiences and avoid unpleasant ones. They belong to a class in which the external effort is felt as too unpleasant (apparently because of the labor and struggle it demands). The unpleasantness of the external reaction is avoided by seeking satisfactions within the self. "My mind to me a kingdom is." Such short-circuiting of vital energy is technically called *introversion.*

[2] *Cf.* Pfister, *D. psa. Met.*, 259. A translation by C. R. Payne (Moffat Yard & Co.) appears as this volume is in press.

A state of introversion, sufficiently pronounced, characterizes an important type of mental disease.

> These examples will give you, I trust [says Jung, in reviewing a case of this nature], an idea of how rich is the inner life of this patient, who, in apparent dullness and apathy, or, as we say "demented," has now sat for twenty years in the workroom, mechanically occupied with her sewing, and occasionally bringing out a few disconnected fragments of speech, which no one has understood till now. Her fantastic jumble of words we now see in another light; they are fragments of cryptic epigraphs, bits of a fairy-land fancy that has loosed itself from bitter reality to found its own distant kingdom, whose banquets are ever spread, and in whose golden palaces a thousand feasts are celebrated. To the dim cloud-world of real things she leaves only a few unintelligible symbols, which need not to be comprehended, for she has long since ceased to ask that we understand her.

Persons in the extremes of this condition do not perform the simplest acts for themselves. They must be fed by tube, and they exercise no restraint in obeying natural wants. They appear stuporous, but close study has given various evidence that they are not so. They appreciate their surroundings, and their minds are active. But their vital energy is short-circuited through their own bodies so that they no longer react to their surroundings in ways consistent with a regulated life.

The factor of pleasure can distort the reaction in other ways besides introversion. People take alcohol and other harmful drugs, like morphine or cocaine, for the enjoyments they afford. Much energy may be externally spent in obtaining the means for these gratifications. The efforts to obtain them are the purest instances of energy misspent for the pleasure obtained through misspending it. For alcohol, morphine, etc., are harmful from the

outset; they are useful only in special circumstances not frequent enough to give rise to an instinctive trend. The enjoyments of alcoholism and morphinism are not involved with fundamentally useful trends as are enjoyments of sexual or gastronomic dissipations. It is as though the energy of the dynamo were indeed carried outside, but spent in destructive ways, or at best only in lighting the little Geissler tubes, which look pretty enough, but do no useful work.

But in the healthier ways also, one may spend a great deal of intelligent external effort in obtaining pleasures whose enjoyment is not good for the organism. These belong to a class already considered, in which the reaction is in itself legitimate, but bad in the particular situation. Probably most (though not all) reactions that give pleasure are also parts of trends which at some times and under some circumstances have been useful to the organism. It is the change in time and circumstance that makes them harmful. Sugar, which is pleasureable to eat, is, in general, good. It is when one eats too much, or when the stomach is disordered, that it makes one sick. The pleasures of sexual relationships are indubitably useful for racial continuity; but they may also lead to excessive and harmful indulgence.

To sum up briefly the points of discussion: the use of vital energy lies in its discharge along ways that produce action necessary to the organism's survival. These ways we call the fundamental trends. In the first instance they are concerned with the performance of vital functions, such as respiration, nutrition and reproduction. Combative and social trends arise as adjuncts and supplements to these. Human conduct is made up of a great many different trends or behavior-patterns which serve the sev-

eral ends, though often very indirectly. The use of vital energy is like the use of electric power from a dynamo. Energy is converted for the body's use, as the power of the falling water is changed into an electric current. The fundamental trends represent the several functions which the current can perform: like food seeking, sexual reactions, combativeness on the one hand; light, heat and power on the other.

The waste of vital energy lies in expenditure of it which does not serve, or may even hinder, the activity of the fundamental trends. The general ways in which it takes place are: (1) A change in the external situation which makes the instinctive reaction inappropriate, as when the fish bites the baited hook. This reaction corresponds to a motor properly connected to the dynamo, but improperly to its machines. (2) The more remote any reaction is from the end-realization of the trend of which it is a part, the greater the chance of its being inappropriate according to principle (1). (3) Different trends of the personality may oppose one another (e.g., desire and modesty), causing mental conflict. The multiplicity of human trends makes this an especially important factor in the case of man as compared with animals. Animals are more subject to disturbances according to principle (1). Mental conflict corresponds to the crossing of electric circuits. The trends involved are more or less blocked. (4) If the conflict is mainly between a trend and external obstacles, without important division of the personality against itself, the disturbance of mental adaptation is not nearly so serious. (5) The shirking of effort necessary for the realization of fundamental trends seeks satisfaction in subjective mental activity (e.g., day-dreaming). This corresponds to

the short-circuiting of electric energy and the resulting failure to travel through its appointed ways. It is called introversion. It is a very serious factor in maladjustment. (6) Pleasures harmful to the organism may also be sought through external effort. They may be harmful generally, as alcohol; or only incidentally, like overeating a craved food.

In presenting these points, we have many times crossed the boundary between the motor and mental varieties of behavior, granting, indeed, that such a boundary exists. The same principles that operate to make an action useful or not, operate to make a thought useful or the reverse. Like conduct, thought is useful if it aids in the adaptation to surroundings, wasteful if it fails to do so. We shall see how conscious thought is apparently an essential factor in some of the more complicated adaptations. But we shall also see that men can, and do, afford to think more loosely, and in a much greater variety of ways, than they can afford to act. If the pilot makes port, in Frazer's metaphor, it matters little if he steers by a Jack-o'Lantern or by the stars.[3] A savage can well afford to believe that the earth is flat, and for him it is "true" that the earth is flat. We must not judge the usefulness or wastefulness of a thought in terms of any "absolute" truth or falsity. Ideas have been practical that have later been found untrue, such as the primitive belief regarding the earth's form. Other things that we may accept as true, like the binomial theorem, are still without practical significance to the mass of us. Now if belief began and ended with belief, without representation in conduct, it would be proper enough for one to think

[3] *Cf.* Macallum, "Scientific Truth and the Scientific Spirit." *Science*, 43 (1916), 439–446.

that the earth is flat, or that eclipses are made by witchcraft. But the savage who thought eclipses were made by witchcraft would be apt to waste his energy in vain charms against them, while his wiser brother made them the occasion for gathering scientific knowledge. Thus it is that certain ideas — such as that you can injure your enemy by injuring a likeness of him — are, when acted upon, much more likely to result in unadapted behavior than certain other ideas, such as that you can injure your enemy by piercing him with a spear. The former kind of ideas we call false ideas, the latter true ones. What distinguishes true ideas from false ones is simply that true ideas are represented in conduct by useful reactions, and false ideas by wasteful ones.

Consecutive thinking consists of associations of ideas. "Associative thinking"— though a tautological term — will be useful as a generic term for all kinds of thinking. Some kinds of associative thinking are represented in conduct by useful reactions, and are "true" thinking; other kinds by wasteful reactions, and are "false" thinking. But, in this conception, what is true at one time and place is false at another time and place; not even a "hair perhaps divides the false and true." We therefore avoid these terms, with their ingrained connotation of a sharp contrast.

We do, however, conceive associative thinking as of two sorts, one of which "works" and the other does not. The kinds of thinking which work (as that it will injure your enemy to pierce his breast with a spear) have been called *realistic* thinking (Bleuler, Freud), or *directive* thinking (Jung, quoting James). The kinds which do not "work" (as that it injures your enemy to behead an image of him), have been called *autistic* think-

ing (Bleuler), or *phantastic* thinking (Jung). We shall use Bleuler's terms of *realistic* and *autistic,* because he has given us the fullest and clearest development of the conception. To summarize:

Associative thinking divides into:

"False," or Phantastic Autistic	Thinking	and	"True," or Directive Realistic	Thinking

In general, a tendency to realistic, "logical," "common-sense" thinking grows in us by reason of its service in meeting our situations favorably and wholesomely. Just as useful patterns of behavior tend to be perpetuated, and harmful ones to disappear by selection, so have the modes of thought that are more useful tended more and more to order our important actions. Almost the entire thinking of primitive humanity was governed by indiscriminate, simply associative modes of thought, not yet subjected to the selective test of "working" or failure. Autistic thinking in relation to the sphere of voluntary conduct is therefore very prominent in them. Such thinking appears in the foreground of mental disease as we see it to-day. But in normal persons, autistic thinking is gradually being relegated to less essential functions, like dreaming, wit, and forms of mental recreation. In the mentally healthier persons, this relegation and selection is the more complete. Realistic and directive thinking has been more and more selected for survival. "The more nearly custom represents a direct reaction on the environment in the actual struggle for material aids to existence, the more rational [realistic] a test does it undergo; and, conversely, the more derived the societal forms, the more clearly do they fall under the tests

of tradition [which are autistic] rather than of reason." [4]

It has been indicated that the most fundamental needs of human nature, like those for air and water, are comparatively free from such autistic interference. The food of which the Malagasy warrior is deprived by his peculiar superstition [5] may be a convenient one, but it is not essential to his existence. If it were essential, the superstition would not arise. There is a "critical point" in autistic thinking, beyond which wasteful acts in accordance with it will not be performed. Carveth Read [6] cites a tribe which regarded as a spirit or ghost a large eel living in a nearby stream. In consequence, no one might drink at the stream. One pool, however, "for convenience," was not included in the tabu.

The genial discoverer of roast pig had to burn his house down whenever he desired this delicacy, until he found that it could be prepared at a smaller fire built for the purpose. In like manner, some savages must needs abandon a house in which a person has died, but others avoid this waste of property by simply carrying the corpse out through a hole in the wall, which is immediately stopped up so that the ghost cannot find his way back. An ax is a pretty necessary tool for the savage; hence, the Australians mentioned by Sumner exempt it from the burial to which they commit the remaining possessions of the deceased. As Read sums it up, "a conflicting desire creates a limiting belief."

On the other hand, autistic thinking retards the correct interpretation of a fact, where the fact has not the imme-

[4] Keller, "Societal Evolution" (1915), 132. (Matter in brackets added.)

[5] Described *infra*, p. 57.

[6] "Psychology of Animism," *Br. J. Psych.* 8 (1915), 1–32.

diate and practical significance that obtains in the above instances. In 1878 a man published a finding, based upon "exhaustive investigation of the instrument," that the Edison phonograph produced its effect not by mechanical but by fraudulent means.[7] Joseph Conrad gives two excellent delineations of such adherence to autistic modes of thought, opposed to the face value of the data of sense-experience:

> . . . and he knew that they were all brothers, and also immortal. The death of the artist, who was the first white man whom he knew intimately, did not disturb this belief, because he was firmly convinced that the white stranger had pretended to die and got himself buried for some mysterious purpose of his own, into which it was useless to inquire. Perhaps it was his way of going home to his own country? . . .
>
> . . . Moreover, they disliked Arsat, first as a stranger, and secondly, because he who repairs a ruined house, and dwells in it, proclaims that he is not afraid to live amongst the spirits that haunt the places abandoned by mankind. Such a man can disturb the course of fate by glances or words; while his familiar ghosts are not easy to propitiate by casual wayfarers upon whom they long to wreak the malice of their human master. White men care not for such things, being unbelievers and in league with the Father of Evil, who leads them unharmed through the invisible dangers of this world. To the warnings of the righteous they oppose an offensive pretense of disbelief. What is there to be done?[8]

We have no means of knowing whether our thinking is realistic or autistic unless we are aware of it, unless it is consciously entertained. We shall therefore consider the question: under what circumstances is (conscious) realistic thinking a requisite part of adequately meeting a situation?

[7] Quoted by Pfister from Kemmerich, "Kulturkuriosa."
[8] "Tales of Unrest," 161–162, 323–324.

Whether or not an animal survives in the world depends in the first instance on how it acts toward its environment, and not on how it thinks about it. To the child or primitive man it makes little difference whether he thinks of the rain as atmospheric precipitation or as angels' tears for the world's wickedness, so long as he has sense enough to come in out of the rain. But if an Indian is about to go seal hunting, or the child to grow a little garden, much more depends on good foretelling of the weather. Then it would work better to consult meteorological observations than police court records. But such action involves looking upon the rain not as angels' tears, but as atmospheric precipitation. People who acted on the former supposition would not foretell the weather so well. In this way, certain kinds of thought or belief are useful, others wasteful or harmful; some serve to direct actions which result well, others badly.

We regard the action as dependent on the thought because the action would not take place without the previous presence of the thought. Further example may show more clearly this direct dependence of a well adapted action on a certain kind of thought. Suppose I am to interview a man living in Pittsburgh; I naturally order my plans to go to Pittsburgh. Meanwhile my eye falls on a telegram announcing that he has gone to Buffalo. My conduct will be altered in response to that stimulus, and I shall not go to Pittsburgh, but to Buffalo. But, unless the idea that he is now in Buffalo has first come to my awareness, I shall still go to Pittsburgh, and miss him.

Again, the information "he has gone to Buffalo" being received, there must be a correct interpretation of it. There must be a correct mental reaction to it that

there may be a correct bodily reaction. I must not think that he can be in Pittsburgh and Buffalo at once. I must not think that only his body has gone to Buffalo while his soul is still in Pittsburgh. I must not think that he is to be reached in the buffalo range at the Zoölogical Park. These "autistic" modes of interpretation must be avoided. I must realize that the fact of his having gone to Buffalo precludes my meeting him anywhere but in the city of Buffalo. Only then shall I act properly by going there.

Many activities have not this dependence upon a proper mental reaction. Digestion and procreation go on no matter what fantastic ideas one may have concerning them. We do not have to reflect that we are being burned, to draw the hand away from the flame. Only the more complex vital activities are thus dependent on correct antecedent thought.

It is when the question of the control or application of the facts of nature enters that it makes a difference whether our thought about them is "true" or "false." Thinking that is true, i. e., that fits in with all experience by which it can be tested, is what has been termed "realistic thinking." Thus the thought "I should go to Buffalo myself if I wish to see the man who has gone there," is a part of realistic thinking. If I thought that I might save myself the trouble and expense of going to Buffalo by simply holding telepathic communication with him, that would be out of accord with experience. It would belong to the other type of mental activity, to which Bleuler gave the name of "autistic thinking."

The distinction of realistic and autistic thinking is one of degree rather than of kind. Those ideas that accord with current experience we consider as realistic

thinking. Mental processes that do not accord with the world's experience we call autistic thinking. To-day we assign to the domain of autistic thinking many ideas, like the flatness of the earth, which were realistic thinking by the experience which past ages could apply to them. Such ideas we now see only in dreams, jokes, imagination, or plainly illogical reasoning. They seemed to more primitive minds wholly consistent with the known facts of life. The hero of myth could escape by crawling under the horizon. But it is now only in jest that he can crawl through a hole and pull the hole through after him.

The point to be made is, that prevailing ideas have been modified in evolution for the benefit of the individual, just as the external behavior-patterns have been modified. The modes of thought and inference used by the child or savage differ widely indeed from those of the cultured man of business or science. The latter does not think he can injure an enemy by injuring an image of him; the former does think so, and acts upon the belief. The savage can afford to believe that the earth is flat and that the sun is a disk traveling over it. The modern navigator can scarcely hold such ideas. If he should hold them, he must keep them in a "logic-tight compartment" away from his professional conduct. The child can afford to let his world of fancies be real to him, because his real needs of food and shelter are met for him by his parents. Thus a great many thoughts and notions exist in the childhood of the individual and of the race, which, as experience grows, fail to meet the greater demands of advancing culture, and must eventually be discarded.

If one were asked to name a distinguishing character-

istic in the instinctive life of men and animals, one could scarcely do better than to say that men are distinguished by a characteristic instinct for conceptions of natural causes and effects. It is by furnishing these conceptions that the mind is useful in molding the world to our desires. Only through them are the more complex natural phenomena to be utilized by us. The instinct-trend for developing these conceptions is infinitely stronger than, and far outpaces, the influence of reason in keeping them correct. The great mass of folk-beliefs about natural phenomena are false;[9] they arose in response to imperious desire for some means of controlling these phenomena. The savage wishes to control the seasons; to send sickness to his enemy; to be successful in the hunt. Therefore, he needs and develops rigid ideas of the proper way to accomplish these things. The uniform falsity of these ideas seems to have no influence on their development, and only a very slight one on their persistence. There are today superstitions about wireless telegraphy that must have arisen since the apparatus was introduced. *Magic* is a name applied to certain primitive conceptions of natural causes and effects. Magical beliefs have arisen, not by way of scientific experiment, but, as above, by vague, irrelevant and chance associations of the ideas involved. Thus they are extremely likely to be false. They are among the most important products of autistic modes of thought. Frazer points out that, as their unfitness begins to be perceived, they are first displaced by a religious appeal to the supernatural for the control of forces that men cannot command. Then, as experience grows, the false ideas of nature in

[9] For examples of usages arising from false inference, *cf.* Sumner, "Folkways" (1913), 24–25.

magic are corrected in the name of science.[10] The reinterpretation of phenomena on a natural basis now replaces the appeal to the supernatural.

The fundamental principle of autistic thinking is, that things are considered to be in the relations of identity, or of cause and effect, simply because they happen to be associated together in the mind. From this we derive the conception of symbolism. A familiar form of autistic thinking attributes responsibility for an occurrence to the nearest person involved in it. The ancients considered the herald responsible for the news he brought, and executed him if he brought bad tidings. People today feel resentment toward the telephone operator who tells them that the line is busy, and to a less degree toward the meteorologist who forecasts bad weather. In a further step toward reality, we jokingly chide the postman who has no letters for us. These cases show plainly the assignment of a cause on the basis of the primitive associative mechanism; that of temporal contiguity. More rationalized mechanisms of association are found in the ordeals: the fire will not burn the suspect if he is innocent; the water will not receive him if he is guilty; the just cause will triumph in combat.

As we have seen, the whole doctrine of sympathetic magic exemplifies the autistic mode of thought. It does not fit any test of experience. Now, it is obviously less trouble, not to say safer, to hang an image of one's enemy than to go out and fight him. Thus, a very powerful factor in the preservation of autistic thinking is that of *greater immediate ease.* The importance of this greater immediate ease has grown with mental evolution.

[10] An essentially similar view is referred by McDougall, "Social Psychology" (1914), 317, to Stuart Glennie.

It is easier to call your opponent names than to show the logical weaknesses of his theory, if indeed it has any. In civilized life, autistic modes of thought regularly occur because they are easier, *when the easier way will do.* The chief examples of autistic mental activity are now found in those passages of life in which the mind is not called upon for the direct meeting of some organic need. That is, they are found in wit, in dreams, in the child mind, in poetry. Whenever, as in these instances, one is freed from the limitations which logical, reasoned, experiential thinking imposes, the association of ideas can afford to proceed without strict accordance to logical principle. These modes of thought are also richly illustrated in abnormal modes of thought corresponding to abnormal trends of conduct: such are the symptoms of mental disease.

There is a familiar biological generalization that the individual represents in his development the development of the race. The child physically resembles his arboreal ancestor more than does the adult, and his mind is more like that of primitive man. Evidence is accumulating that the false ideas of mental disease also show features of reversion; that is, the patient makes special use of autistic mechanisms in his modes of thought, in his processes of reasoning, in his criteria for deductions. There result ideas which are characteristic of former periods of race development. As an example, Jung cites a case of paranoid dementia praecox, who, despite a good education, reverts to the primitive belief that the earth is flat, and the sun a disk traveling over it. The extent and character of the parallel between pathological ideas and those of primitive development, dream-life, etc., is too large for suitable treatment in this volume. We shall

here confine ourselves to studying a single, well-defined aspect of this parallel between autistic modes of thought in different mental processes.

Of all associations, one of the most superficial, and least likely to be practically relevant, is the association between two ideas through their designation by a similar vocable. Thus, at least three different meanings attach to the sound representing the word *bear,* which have no logical relation to one another. The identification of ideas on the basis of the similarity or contiguity of their phonetic symbols (a pun) is one of the purest forms of autistic mental activity. We are to examine the forms of mental activity in which it occurs.

Its most familiar appearance to us is that of punning. Here the play on words uses the sound of a word or some irrelevant feature of its meaning to convey unexpected ideas not in accord with reality. For example, it was easy for Washington to throw a dollar across the Potomac, who had thrown a sovereign across the Atlantic. The best known of these occur in the form of conundrums. The telephone number of the Garden of Eden was 281 Apple (two ate one apple). By similar tokens we learn the difference between a shoemaker and a poet (makes shoes, shakes Muse); why no one need starve in the Arabian desert (because of the sandwiches [sand which is] there); together with the origin of the food supply (the children of *Ham* were *bred* and *mustered* there; when Lot's wife was turned into a pillar of salt all the family *but her* ran down into the desert). Sometimes the association is very remote, and established through many intermediaries, as the reason for the blindness of the wind, the steps being breeze, zephyr, yarn, tale, attachment, love, blind.

While thought processes of this kind are many times multiplied in normal life, they are not accepted at their face value; the normal traveler in the desert does not equip his caravan with nothing to eat. Such a mechanism does not occur in the thought by which the individual lives. Any one who held telephonic conversations with the cradle of our race would rightly be regarded as pathological. One may still cross himself on breaking a mirror; one may refuse to sit one of thirteen at a table; one may knock on wood on announcement of a piece of good fortune; but play on words is play only, and whoever develops the shadow of belief that "ef time was money, Ah'd be a millionaire," shall scarce escape the mark of schizophrenia.[11] To base one's reasoning on such purely verbal or phonetic grounds, is the most abrupt transition from the healthy mind to the diseased one. The healthy mind shows scarcely anything like it; with diseased minds it is fairly common.

It is not wholly absent in normal minds. In the stupendous folkway material gathered in "The Golden Bough," scattered instances appear of usages apparently determined by certain similarities in the sound of words. The most striking example is the Malagasy prohibition of warriors from eating kidneys. For, "in the Malagasy language, the word for kidney is the same as that for shot; so shot he would certainly be if he ate a kidney." There are a number of cases in which names of common objects are *tabu* if they coincide with the names of certain persons. "For example, if my father is called Njara (horse) I may not speak of him by that name; but in speaking of the animal I am free to use the word

[11] A term first applied by Bleuler to mental diseases in which there is, as it were, a *schism* of the mind against itself. *Cf.* ch. V, p. 197.

horse (*njara*). But if my father-in-law is called Njara, the case is different, for then not only may I not refer to him by his name, but I may not even call a horse a horse; in speaking of the animal I must use some other word" (Alfoors of Poso, central Celebes). Among the Alfoors of Minahassa, northern Celebes, the custom is extended to forbid the use of words which simply resemble the personal names in sound. If the father-in-law is called Kalala, his son-in-law may not speak of a horse by its common name, *kawalo;* he must call it a "riding beast." Cases are reported from the Zulus where common words were changed because they resembled the tabued names of chiefs. "The word for 'lies' or 'slander' was changed from *amacebo* to *amakwata,* because *amacebo* contains a syllable of the name of the famous King Cetchwayo." In Madagascar, after the death of King Makka, the word *laka* (canoe) was replaced by *fiounrama* (Sakalava tribe). Similar usages prevail among the Malagasy above mentioned, and in Tahiti; here, when a king Tu came to the throne, *tia* was substituted for *tu* in various words. (Frazer).[12]

Occasionally the dream makes a play on words similar to that of the pun. For example (private communication):

Dream: The governing body of a university considers a scheme for the prohibition of alcohol. Upon voting, it is found that every one, favoring license, is against the proposition. "Well, gentlemen," remarks the presiding officer, "there doesn't seem to be a dry 'Aye' in the house." It would simply be carrying the "dream-work" a step further to represent the voters as indicating their disapproval by weeping.

[12] *Cf.* many analogous examples from the *Qabala,* cited by Moses, *Path. A. Rel.,* 161–168.

The "Nervus poculomotorius" quoted by Kraepelin is a similar example. This example (not felt as a joke) "is associated with the movement of the arm to lift the cup, the proper words being derailed by the similar sounding *Nervus oculomotorius*. Here belongs also the *Frackelzug* cited by Vischer, where persons with burning coat tails (Frackschossen) pass in review" (*Fackelzug*, torchlight procession).

A fairly frequent process in the language of dreams is that in which two or more ideas are combined by a fusion of certain of their phonetic elements. Kraepelin presents some excellent examples.

Dream Form	Meaning
Psypen	Psychische Typen
Parringen	Parricida u. Berlichingen
Bellfleisch	Das für den Hund zurechtgeschnittene, von ihm in der Schüssel zurückgelassene Fleisch.
Capriviera	Politische Lage zur Zeit Caprivis
Geheimkopeken	Geheimpolizisten (Presumably a mediate association: Secret police, Russia, Kopek)
Scolex	Lateinisch für "der Bucklige"
Würzgrund	Grund, der mit Würzburg in Beziehung steht.

Some of these suggest the lapsus linguae of everyday life. Dreams of the writer's supply the following:

Dream Form	Apparent Elements
(Name of steamship) Camennonia	Cameronia, Pannonia
(Name of mountain) Chickatoharie	Chickataubut, Canajoharie

Dream: An ocean liner is aground, and two smaller ships are standing by. The names of these smaller ships are the *Staria* and the *Hickmanite*. (At the time, the writer saw much of the psychologist, Mr. Hickman, of Utah, who was making a study of certain aspects of Mormonism. The

suffix *ite* is often associated with the naming of religious bodies. The connections of the word *Star* and the suffix *ia* with ocean transportation are obvious.)

Another dream contains the repetition of a sentence in H. G. Wells' "War of the Worlds": "He swung loose what must have been the camera of the Heat Ray." This becomes in the dream: "He swung loose what must have been his *cang.*" The intruded elements are apparently taken from a neighboring phrase, "the clangorous din of the Martians."

This process of denoting the combination of two ideas by an arbitrary fusion of their phonetic elements is met with also in normal speech, quite outside the domain of wit. It occurs every day in the formation of trade names (Natco, Nabisco, Delco, Socony, Clupeco,[13] etc.) Meteorologists have designated a combination of smoke and fog by the neologism *smog,* on the model of the *slithy, mome,* and *wabe* of the *Jabberwock.* No follower of baseball disputed the temporary value of such condensations as *Brookfed, Newfed, Chifed,* to denote members of the Brooklyn, Newark and Chicago Federal Leagues.

Many cases of mental disease show ideas closely corresponding to those of the Malagasy whose warriors may not eat kidneys for fear of being "shot." Such mental processes are in pathological cases the source of, or accepted as the rationalizations of, delusional ideas. A Unitarian is a "unit of the Aryan race"; just as in dream life a Würzgrund is a reason connected with Würzburg, or in real life a Chifed was a member

[13] Designating, respectively, products of the National Hollow Tile Co., National Biscuit Co., Dayton Electric Co., Standard Oil Co. of New York, Cluett, Peabody and Co.

of the Chicago Federal League. The psychotic material to be here cited seems confined to the dementia praecox group; similar processes have, however, been reported in the psychoneuroses. It is also true that the manic-depressive excitements are noteworthy for their sound-associations, though delusions are not readily based upon them; hardly at all save in marked confusion. The dementia praecox cases, here as usual, are distinguished by the absence of confusion. Such a dementia praecox case, S, tells us:

That he had been confirmed and a certificate filled in by Mr. X; that in filling in the certificate the name was changed, and Mr. X wrote his name Catterer. He says that he seated himself on a stool, No. 10, and he got the *te* in *ten,* that Catterer was C-a-t, cat, t-e-r-e-r, and he says all this refers to his condition, calling him a *cat* . . . The word *communication,* i-cat-on; *commission* has the *i* without the *cat.* It means that he cannot conscientiously go on the commission. . . . "The critical point came when I was accused of being a cat. The newspapers tried to advertise me as a notorious evil liver. Used the word 'Krazy Kat.' . . . All such signs K, H, E, L, F, are symbols of mediæval days. Letters like M, P, H, K, I have to look up and see what the symbols stand for." (Is it a system?) "Yes, and in my case they are being used right along. I have only to mention 'Pall Mall' . . . All who recognize Greenwich as the meridian accept the Anglican Church as supreme. Therefore Pall Mall . . . P-all M-all . . . P may mean posterior, meaning we all accept the Greenwich meridian. M has a V connecting the two horizontal (*sic*) lines, that would mean 'connecting link,' meaning this fellow is all right, so that when M is written that way it is complimentary."

(About four months later.) The patient describes with the minutest detail how he interprets the individual letters of a word or a special combination of letters and words which he reads or hears spoken as being signs and code messages. In a similar way he refers to a slight change in a communion service, in which the minister made certain remarks, and to

his going to the Public Library, the latter word being divided in such a way as to have reference to his affairs.

Case P showed, among other features of note, a few processes of this character, as the writing subjoined:

Cf. Revelation, chap. 13, verse 18.
Six hundred three score six
6 6 6
v v v
veni vidi vici
Julius Cæsar (patient identified himself for a time with this personage)
Pontifex Maximus of Rome
absolviren
x
a b s o l v i r e n
x

When next seen the patient was questioned about the sketch, but did not elaborate upon it in any special way. The only motive he gave for the selection of *Absolviren* was that it was a word of ten letters and it was the only word of that kind which he knew. He was asked why he might not use another word of ten letters like Epicanthus, of which the sixth letter is not *v*. He seemed interested in knowing that there was such a word, said laughingly that he supposed that would suggest Nero III, though he did not have in mind any historical personage of this title.

Here the ideas we are concerned with are not so firmly held as in the other cases, and there is more tendency to regard some of them facetiously; thus, from another writing, *"iugum est iugium"* (my yoke is a joke). From a letter:

. . . Becker is the reincarnation of Thomas von Beckett the martyr to the cause of a square deal for innocent blood, and the injustice of so-called English justice. He is also the reincarnation of the corpse whom the gunmen let down through the roof on Sunday, whom Christ restored to life . . .

The similarity of names does not however play an essential rôle in these reincarnations; for the patient identifies himself with the personages of the Trinity (more especially with Christ and the Holy Ghost), another patient with Noah, where the names have no similarity, as well as the writer with Nathaniel of the New Testament, but also with Nathan Hale, addressing letters to him under this name. From another letter:

> And out of his mouth went a sharp, two-edged sword. The abbreviation, Penna. for Pennsylvania, means "wing" in Sanskrit, and "quill" in Greek. It is probably the two-edged sword referred to.

Following are wordplays from another case whose delusional content (that we cannot go into here) presents remarkable parallels to that of P:

> Ho-spit-al . . . Ho means Hallo, spit-all, because all here spit the devil out of them, the spit means just to throw it off.
> William . . . Will-I-am. Every person bearing this name contains a portion of the "direct will of God."
> Buonaparte, i.e., born apart. (Patient identified himself in part with this personage.)

In the richness and fixity of such ideas, the following case F can seldom have been surpassed, and calls for presentation in some detail. It is one of a small group of individuals with inferior mental constitutions, who are insignificant parts of the vast system of *haute finance,* over which they have no control, and in which they feel no share, but develop a dementing psychosis in which the "economic complex" has a special rôle in the picture.

> The patient is described as having always been odd, and never "confiding" in any one. Would leave the room when it was entered by his younger brother, who was making more of a success in life. Held positions at various occupa-

tions but did not keep them, the last one being for three years as stenographer with a financial house, at $12 per week. He left this position "because he felt he was not treated right" about six years before admission, since when he has not worked. At the time of admission he was 33 years of age.

Subjoined is a sketch by the patient with notes from his explanation of it:

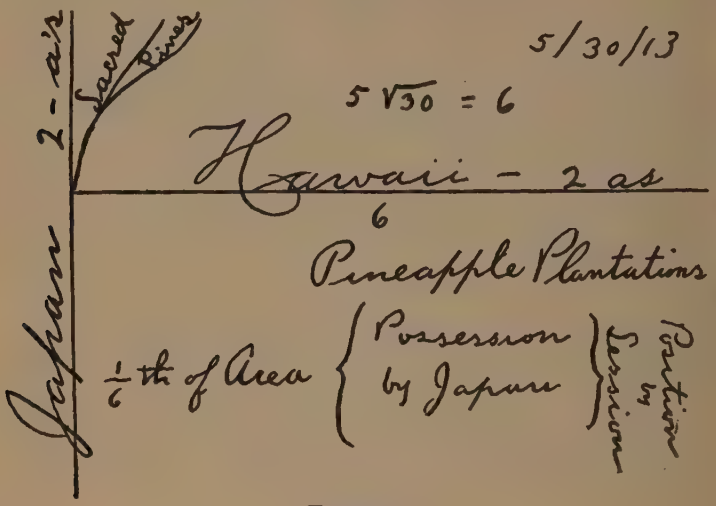


FIGURE 1

There are two *a's* in *Japan* and *Hawaii,* indicating that Japan is entitled to a share in Hawaii. Further evidences of this are the sacred pines of Japan, while the chief product of Hawaii is pineapples. This share is one-sixth; because it is now the 30th day of the 5th month, and 5 goes into 30 six times. Japan to-day owns one half of Hawaii, but she is to lose a third, i.e., two-sixths. She holds it by *session;* lots are to be drawn by *position* to secure an equitable proportion of holdings.

. . . His ideas he derives from his "mind's talking to him." . . . This does not have tone quality, comes merely as thoughts. . . . He told of a "tip" he had received regarding the rates of return that different classes of people were to receive for their labor; that the lower classes were to

receive 3% for their share, the upper classes 5%. 3 is to the left of 5 in the number 35, indicating the inferiority of those who share at this rate. He had seen the figure 35 in a paper, and this special idea attached itself to it. Picking up another newspaper that happened to be lying near, he said, "Let's see if I can't find something to show it here — there's a 3, and a 5," picking them out from different portions of the sheet. It was called to his attention that the figure 53 occurred thereon, in reverse order from what his scheme demanded. "Yes, but that doesn't *mean* anything to me." He turned the leaves and came to an advertisement where on the left side of the page something was quoted at 35 cents, and something on the right side of the page at 55 cents, calling attention to this as double evidence for the validity of his idea. Another "tip," which he did not know whether workmen would make use of, would be very valuable to them if they did, because it would enable them to summarily get rid of any "super" (superior, superintendent), who treated them unjustly or persecuted them. This went on all the time, he said, and when asked to illustrate, told of how a "super" might come up to some "suitor" (employee) and tell him "that was no kind of work he was doing," and that he was no good. (The precise nature of the "tip" was not obtained.) There is to be a square deal in the distribution of business all over the world, in regard to which he had received a "tip" that he should take away one-third of all the shoe business from South Australia. A half of this third, i.e., one-sixth, he is to give to Salem, Mass., to compensate it for its loss of standing to its rivals, as Lowell and Lawrence. The other half he is to give to Elmira, N. Y., which stands in near relation to Salem, having four of its letters, *e, l, m,* perhaps also *a,* the same. Asked about the *ir,* he dismissed the question with a simple "That doesn't impress me." This "depreciation" of South Australia's shoe industry is not to take effect until the 7th day of the 6th month, hence $\frac{1}{6}$. Possibly only one-sixth of the shoe business will be taken away, in which case Salem and Elmira would only receive $\frac{1}{12}$, but to compensate them will have an extra share in the rubber cloth business. Nor is Australia entitled to the use of the term *Queensland,* there being also a *Queenstown* in England; it is therefore to be changed to something else.

Again, the bees are hostile to mankind, and sting us, because we insult them in speaking of their dwellings as *hives,* the name of a disagreeable skin affection; we should call them *homes,* or rather *hones,* because bees produce honey, according to the following sketch:

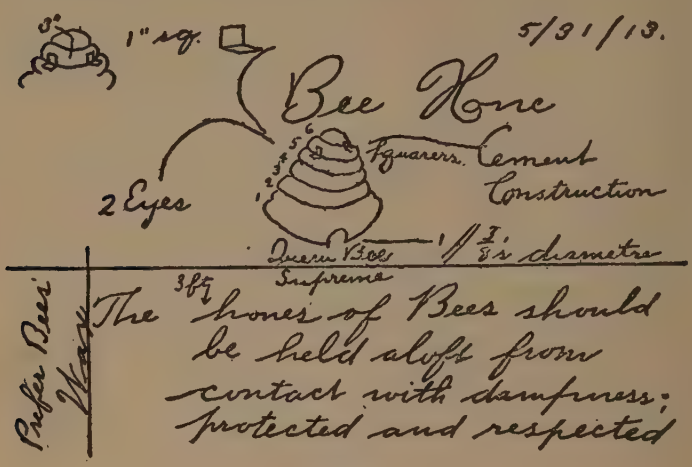


FIGURE 2

Beeswax should be employed for noble purposes only, and not for such lowly uses as polishing floors; because, in thus walking on the products of their labor, we "walk on," i.e., show disrespect to, the bees. . . .

As he was writing a sketch on Japan one morning, he was watching the shadows about a tree in the yard; suddenly these shadows began to move rapidly, in a way that his mind suggested to him was crab-like. The fact that he should see the symbol of a crab, while writing a sketch on Japan, suggested the export of tinned crab-meat from Japan; that the Japanese have a great deal to do with crabs. Crabs perform an important part in the reproductive functions of fish, for, when the fish have laid their eggs, it is the crabs that carry to them the fertilizing element; without crabs, no reproduction of fish would be practicable. When reminded that fish often are propagated under conditions where crabs are excluded, as in aquaria and hatcheries, he refused to believe it was by any natural method, saying that

the keepers of such institutions had their own secrets, and might be able to accomplish it in some special way. Asked if any like intermediary were concerned in the propagation of the human race, he said, "Well, I've had them on me," and went on to tell at length of how he had caught crabs; and had cured himself with "blue butter" (a mercurial ointment); how they were about the size of a cross section of spaghetti, and white, the color of human flesh, which they might be made of. While he gave no exact formulation of their rôle in human reproduction, he said quite plainly that he thought they had "something to do with it."

The fact that these two arthropods are entirely different in species and nature is irrelevant; enough, that they are designated by the same vocable, that they have corresponding symbioses with fish and men. The guess may be hazarded that the latter-expressed idea is psychogenetically the earlier one. From other observations it is apparent that the patient is also acquainted with the actual nature of sexual relationships, the above itself being constructive testimony to this.

Apropos of nothing, he asked the examiner what he thought of the guilt of Tucker, executed for the murder of Mabel Page. He himself seemed to have considerable doubt as to whether Tucker merited his end, which he rationalized as follows: If one spells out the name of Tucker, the first letter is *T*. This is symbolic of China, whose principal export is "T." This indicates that Tucker was composed, "a big sixth of him," according to the first capital letter of his name, of "Chinese corpuscles," i.e., that he had much of the Chinese character in him. But the Chinese are characterized by conscientiousness and so Tucker, having so strong an element of this quality in him, would not be likely to be guilty of the act for which he suffered, unless, indeed, the other letters of his name should offset the good influence of the first one. *R* represents riches, money, a "driving principle," that might operate for evil. *E* is for English, French Protestantism, i. e., bigotry or narrowmindedness. *K* he brought into connec-

tion with *uck,* Kentucky, hot Southern blood, passion. *C,* on the other hand, represents Christiania, conscience, conscientiousness, a good influence.

The mental process in instances like the above might be described as an "over-identification" of language symbols with the things they represent. For example, the idea of debasement becomes so closely identified with "walk on," that wherever a process denoted by "walk on" occurs, it carries with it this idea of debasement. In Will-i-am, the language symbol of *will* is so overidentified with the process of volition, that, when the symbol occurs in a common name, this name carries with it special powers of volition. (Compare the phrase,"— is my middle name.") As stated above, such false identifications are characteristic of primitive and pathological autism.[14] Further aspects of it will be considered in the next chapter.

In closing let us briefly consider the relation of these data to our fundamental conceptions. What is the relation of autistic mechanisms to the use and waste of mental energy? How do these mechanisms compare with realistic thinking in their significance for adaptation to life?

"The prime function of autism," remarks Bleuler, who originates the conception, "is wish-fulfillment." The value of autistic thinking for this purpose lies in the facility with which, freed from the bounds of reason, it can afford the pleasures of mental wish-fulfillment. This generalization applies most clearly to the pathological field. It is illustrated in the present pathological material. By the arbitrary association of certain pho-

[14] Good parallels could be found in some of the astrological arguments, particularly in the dream-book type of perversions.

netic similarities, P and F are able satisfactorily to rationalize the ideas of their supreme importance to the world's affairs. S makes them confirm his persecutory ideas.

In the folklore material the wish-fulfillment does not appear on the surface. We do not understand why the Malagasy warrior should want to avoid kidneys. The "shot" idea may be a rationalization of some other cause for avoiding them, but we do not know what it is. The modern warrior is symbolically "shot" to make him less fearful of bullets.

In all these cases the autistic mechanism of phonetic association opposes adaptation to life. It helps to deprive the Malagasy warrior of a useful article of food, to keep the natives of Celebes word-hunting when they might be head-hunting, to support the most absurd biological and economic notions in the realm of mental pathology.

Yet this is a one-sided view of a small part of the field. These phonetic associations have still a humble rôle of social usefulness in the sphere of wit. The essential thing is that we do not use a mental mechanism suited merely for purposes of wit, as a guide to important actions in life. The proper regulation of our thinking demands that the merely mental satisfactions be not obtained at the sacrifice of deeper organic needs. Autistic modes of thinking hardly belong in the chase, in the tilling of the soil, in the conduct of commerce, industry and warfare. Autistic modes of thinking have controlled and hampered them among barbarous races. Enlightened communities bring all these activities more and more under the wisdom of experience. Autistic modes of thinking belong in the creations of music, of painting,

of poetry, of imaginative literature of all sorts. Nearly all advertising makes use of them. They will always govern the realms of fantasy and of wit. Religion could not exist without them. And in the field of knowledge, truth becomes known by means which are not logical, and is confirmed as realistic thinking by its ability to meet the test of experience. New truth may come to light through autistic modes of thought ("intuition"), precisely because autistic thinking is not bound by or subject to our incomplete experience of the past. Truth does not depend wholly on logical discovery. The Missourian does not excel the man who can see things without being "shown." Thus the rôle of autistic thinking is often salutary as well as important. We know that "dirt" is only "matter out of place," and the mental refuse of pathological autism is only "thought out of place." Mental evolution can very well be formulated in terms of adjusting the realistic and autistic modes of thought to their rightful spheres.

One might sum it all up by saying that realistic thinking contributes mainly to making it possible to exist, and autistic thinking to making it worth while to live.

CHAPTER III

SYMBOLIC ASSOCIATION

The sign ℥ is the symbol for the weight of an ounce, and represents the real ounce. We do not demand any logical connection between the particular symbol and the weight. We can at once accept it as standing for the weight as a useful, if arbitrary, symbol. The letters o-u-n-c-e are just as much a symbol for the weight as is the sign ℥. M is a symbol for meter in measures of length, and the letters m-e-t-e-r are in turn symbolic — arbitrarily or "conventionally"— of the length of a certain rod which is kept in Paris. A thing is a symbol of something else, when for some convenient purpose, it is identified with, used identically with, that something else. A greenback is symbolic of metal in the treasury, and can be identified with the metal for the purpose of buying something. But it would be an unsound procedure to carry the identification so far as to try to plate another piece of metal with the greenback; or to revert to the case cited in the preceding chapter, T properly symbolizes the beginning of the name Tucker, but not a country whose principal export is tea. Such are useful and wasteful, normal and pathological symbolisms. The tendency toward symbolism, and toward certain types of it, is one of the distinctive manifestations of "autistic thinking."

Most of our intellectual life is carried on by means of

symbols. Dean Swift suggested what existence would be without them:

> At the grand academy of Lagado, in the country of Laputa, there was a project, "that since words are only names of things, it would be more convenient for all men to carry about with them such things as are necessary to express the particular business they are to discourse on . . . which has only this inconvenience, that if a man's business be very great . . . he must be obliged in proportion to carry a greater bundle of things upon his back . . . I have often beheld two of these sages almost sinking under the weight of their packs . . . who when they met in the street would lay down their loads, open their sacks, and hold conversation for an hour together; then put up their implements, help each other resume their burdens, and take their leave."

The use of language, replacing any such cumbrous means of conveying ideas, is the most important function of symbolism. Nothing can have contributed more to mental evolution than the exchange and cross-fertilization of ideas which the symbols of language make possible. Words are the coins which symbolize ideas, just as money denotes values.[1] A short discussion of the range of symbolism in language, where its service is plainest, will help to follow its course through other, sometimes less open, fields to be explored.

The origin of language-symbols is to be found in psychology and not in philology; just as concepts of the origin of life belong to biology rather than to paleontology. Although the question has been considered mainly by philologists, the consideration has always been from a psychological standpoint. Three principal origins of language have been postulated:

First, that the names given to objects may have been derived from sounds naturally associated with them, espe-

[1] *See* Sumner, "Folkways," 179.

cially sounds produced by the objects named. (Onomatopoeia, "Bowwow" theory.) The names of birds and insects often show this origin: chickadee, whippoorwill, katydid, cricket, etc. It is possible that the sound association need not be so constant and direct as in the above cases. Occasional and even chance associations of some sound with an object or phenomenon might give rise to a name, thus greatly extending the application of this theory.

Second, certain affective reactions provoke motor responses through the vocal organs. ("Pooh-pooh" theory.) Interjections still preserve this primitive mechanism; but words of this origin are now but rarely to be traced in the living grammatical structure of the language.

A third mechanism, which is more hypothetical than the other two, supposes some association between the object and a definite vocal response, though the two have not been experienced in direct association. That is, just as the knee jerks on tapping the kneecap, without its ever having been tapped before, so there might be a vocal response which would give a name to an object, though the vocable and object had not been experienced together. ("Ding-dong" theory.) A negative argument for this theory is that there are many objects and phenomena whose associations with any sound are not frequent enough or characteristic enough to give rise to a name. A positive reason for the theory is that in the language of children, neologisms sometimes occur, with perfectly distinct meanings. These meanings have no traceable sound-association with their object; e. g., a child calls the little whip holder on the side of a buggy a *conger*.

Above all one must not suppose that language arose

by any special act of creation which no longer operates. All the mental processes by which language originated are still operative. New language is daily being created by the same associative processes through which the first words arose.

Once a fair number of words were thus established, the formation of compounds would begin, parts of speech would develop, and the processes of agglutination, inflection, etc., would develop in due course. Upon this phase of the subject, comparative philology sheds abundant light.

In sum, ideas come to have names, i. e. develop language-symbols, through association of vocal sounds with them. The problem of the origin of language is to determine the nature of such associations. They may have been of several kinds. The "bowwow," "pooh-pooh," and "ding-dong" theories are not to be considered as mutually exclusive. This elementary process, by which an idea derives a name, or vocal symbol, through a sound especially associated with it, we may call a primary linguistic symbolism. It is the essential symbolism of all speech.

Obviously it would happen that two ideas, one or both of which already have a name, are associated together with a special intimacy; e. g., the kettle and the water which it contains. By the same process the idea *kettle* often replaces in speech the water it contains, and we say, "the kettle boils." The word *kettle* has become a symbol for the water in the kettle. Later we shall see that other figures of speech are forms of such symbolism. These cases in which the symbol is derived from a word already possessing a meaning form a secondary variety of linguistic symbolism.

The pronouns, a pervasive development in language, have a special position. They are symbols whose meanings are not fixed; what they symbolize is determined entirely by their context. They are short vocables, and make for economy, at least in speaking effort. The saving of mental energy must, however, be their more important function. If one says *Charles went home,* the word *Charles* brings up many associations connected with the person of Charles which are irrelevant to the central fact of his going home. If one says *he went home,* it being evident that Charles is meant, these irrelevant associations are more remote, and the central fact of his going home is allowed to stand out more clearly. The *raison d'être* of the pronoun is that it saves a number of irrelevant associations which would disturb the perception of the central idea. No similar development seems to have occurred with "pro-verbs," though in the English language, this service is partly performed by the phrase, *to do so.*

It appears that any process of association may cause one thing to be used as a symbol of another. Every "law of association" is also a principle of symbolism.

The simplest symbolic associations are those by similarity in sound, already discussed from another angle. Those familiar with baseball will recall the elaborations of *"foul"—"fowl."* *Fit as a fiddle* is another common instance of this kind of association and symbolism; the fiddle has no special title to fitness other than its sound. Another sound association, of a less direct type, is the use of the word *squealer* to designate one who betrays his companions. An accepted source of the squeal is the pig; thus, in the underworld, *squealer* becomes further symbolized to *pig's head.* Another term for such a traitor is *pipe;* perhaps simply as a conveyor, or because, in music, a pipe-like instrument may emit a squeal. The symbolic fate of the squealer is then to be put *under*

the sink with the rest of the pipes, i. e., to pass out of sight.

Words thus come to have, not only their primary meanings, but other meanings which happen to be associated with the primary ones. The word *head* means a part of the body, the chief of a group, a topic. The original significance of the word may be lost; many etymological descendants of *caput* have no reference to the head that rests on shoulders. A complete list of instances would form a large collection; many may be gathered from any discussion of so-called "semantic change." Interesting is the following citation (from Jung) of various meanings, all of which are distinctly associated, for the Sanskrit word *tejas:*

1. Sharpness, edge. 2. Fire, brightness, light, glow, heat. 3. Healthy appearance, beauty. 4. The fiery and pigment-producing power in the human organism (believed to reside in the bile). 5. Strength, energy, vital force. 6. Violence. 7. Spiritual, also magic, power, influence, good appearance, dignity. 8. Semen.[2]

We speak of certain meanings of words as literal, and other meanings as figurative. Thus *head* as a part of

[2] A fuller list from Apte's Dictionary (1890) is as follows:

1. Sharpness. 2. The sharp edge (of a knife, etc.). 3. The point or top of a flame. 4. Heat, glow, glare. 5. Luster, glow, brilliance, splendor. 6. Heat or light, considered as the third of the five elements of creation. 7. The bright appearance of the human body, beauty, 8. Fire of energy. 9. Might, power, strength, valor, martial or heroic luster. 10. One possessed of heroic luster. 11. Spirit, energy. 12. Strength of character, not bearing insult or ill treatment with impunity. 13. Majestic luster, majesty, dignity, authority, consequence. 14. Semen, seed, semen virile. 15. The essential nature of anything. 16. Essence, quintessence. 17. Spiritual, moral, or magical power. 18. Fire. 19. Marrow. 20. Bile. 21. The speed of a horse. 22. Fresh butter. 23. Gold. 24. Clearness of the eyes. 25. A shiny or luminous body, light. 26. The heating and strengthening faculty of the human frame seated in the bile. 27. The brain. 28. Violence, fierceness. 29. Impatience. (For this material I am indebted to Professor Jackson, of Columbia University.)

the body is used in its literal sense; as chief of a group, in a figurative sense. The literal sense is analogous to the primary symbolism; the figurative sense to the secondary symbolism.

Examples from Hill's Rhetoric are:

Literal Association		Figurative Association
mirror	reflect	mind
river	source	information
bird	flight	fancy

The simile and the metaphor are bald statements of symbolisms based on associations by similarity. A profusion of instances of symbolisms may be taken from current slang: *Up a tree, out on the edge of a limb, buffaloed, live wire, pinched, beggar, perisher,* etc. The varieties of metonymy and synecdoche show similar correspondence with associative mechanisms. Thus the relations, part-whole, genus-species, cause-effect, not only exemplify figures of speech, but are categories which appear prominently in experimental studies of the associative processes. The figures of speech correspond to secondary varieties of linguistic symbolism. They are interesting in showing the many forms of association through which symbols are established.

We need not pursue further this review of the possible relations between the symbol and its object. So far as can be seen, the association does not have to be of any particular type. Any two things which are associated in the mind may become symbols, one of the other. It may be through an association by contiguity, similarity, part-whole, genus-species, or what not. This appears true both of language symbols, and of other symbols to be discussed, such as those derived from sympathetic magic and dreams.

In order that a symbolism may be established, there must first be an association of some kind. But all things associated do not form symbols. In addition to this underlying condition of symbolism, there must be dynamic factors or motives of symbolism — a mental gain resulting from it.

The rhetorician explains that symbolism effects a mental economy, that we are stimulated and pleased to follow the skillful tracery of these various kinds of association. This seems to explain sufficiently why figures of speech occur as above. But the tendency to form symbols seems also to affect special classes of ideas; or rather ideas which have special significance to the person who holds them. Illustrations are found in linguistic symbols, because the same principles operate in symbolism generally as in the symbols of language.

The prime condition favoring the formation of symbols in language and other mental products is that the idea shall have more than the average interest for the person. Classes of ideas which are of general human interest, like religion and love, have filled the world with their symbols. Specific words (*resp.* ideas) that fall into some category of general interest, and are frequently employed, show marked tendency to take on symbolic forms. The *dollar,* for example, appears as *plunk, bone, buck, piece of lettuce, simoleon, iron man,* etc. Perhaps the usual word brings up a disagreeable feeling of triteness which is avoided by the use of some more novel association. The genial hero of *Mutt and Jeff* would have reformed altogether rather than have wagered mere dollars on the race track. He dealt in *pesos, great big round ones, seeds, pieces of the monetary unit, joy-getters.*

The same feeling of triteness, or, perhaps, " desire to astonish " with an unexpected and individual expression, brings about a number of slang terms for articles of food, e. g., *hot dog* (Frankfurter sausage), *pair of white wings wid de sunny side up* (poached eggs), *cannibal sandwich* (beefsteak tartare), *three diamond studs* (portion of Hamburger steak).

Again, words expressing unpleasant ideas are particularly apt to find symbolic equivalents. Bereaved persons frequently do not say that their lost one *died,* but that he *went away. Fell asleep* is often used with the same meaning. To *go out* is an equivalent used especially by attendants on the sick. The fact that death may not be wholly unpleasant either to the subject or the survivors is reflected in the note of humor carried by some of its symbolic equivalents, like *passed in his checks,* or the German *abgekratzt.*

The anciently recognized and familiar stars are still symbolized by personifying names; others are identified by number only. In general, if there is a group whose members are to be identified, symbolic names are used where there is marked individuality; otherwise, numbers. A country estate may well have a special name; less frequently the city house. When locomotives were a more distinctive feature in human life, they had special names; now they have only numbers. Merchant vessels and large men-of-war regularly have names; scows, tugs, and torpedo craft are frequently numbered. American submarines used to have names, but are now known by letter and number.

Interest (whether positive or negative) and distinction in the main determine what associations shall develop into symbolisms. Words denoting ideas of interest and

distinction have the greater tendency to be replaced by symbolic equivalents.

The use of a symbol may be to express the fact of distinction. A thing which stands out prominently calls for a special symbol in language to identify it. Such are the great stars, steamships, mountains, and the early locomotives. Again, the application of a symbol may be to create distinction where it does not sufficiently exist. To this class belong others of the examples quoted, like those for hotels, or for some kinds of food. The trade name is an effort to provide distinction for an article by giving it a novel identifying symbol. A Trilby sandwich is made out of a "Frankfurter," a roll, and a bit of mustard pickle. Symbols are thus used on the one hand to express distinction, on the other hand to confer it.

Positive interest, or attraction, and negative interest, or repulsion, each induce the formation of symbols, but in opposite ways. The lover sees his passion reflected in everything from the wooing of doves to the courses of complementary stars. Every idea which comes into symbolic association with his love becomes of itself pleasant for him to contemplate. Thus he clings to the pleasant thought of love and permits it to enter into all kinds of associations. Through positive interest he makes a world of erotic symbols to magnify and extend the pleasantness of the original idea. Great positive interest also magnifies the desire for distinction. The combined rôle of the two factors in giving rise to symbols is well shown in the many half-technical, half-slang equivalents for baseball topics.

Symbolism arising from negative interest, on the other hand, uses the symbol as a means of escape from an un-

pleasant original idea. Speech disguises many facts of life which are felt to be unpleasant, by euphemisms. A euphemism is not necessarily symbolic. If we say of a deceased person, *he ceased to live,* that is circumlocution only, because it expresses exactly the same fact, only in a less direct way. It is a simple euphemism. If on the other hand we say, as above, *he went away,* the ordinary meaning of this is something different from *he died,* and we may call this a symbolic euphemism. Simple euphemism states the same fact, but in a more delicate way; symbolic euphemism uses words which ordinarily convey a different meaning of some sort.

Symbolism arising from negative interest is obviously not intended to make the unpleasant ideas any plainer or more distinctive; it is rather to disguise them or make them vaguer. Thus we can understand how it is that the process pervading nearly all linguistic symbolism of this kind is one of further *generalizing* the idea to be conveyed. In experiments on the associative process, the corresponding class of associations is called *supra-ordinates.* That is, the response *animal* to the stimulus word *sheep* would be a supra-ordinate association. It has been regarded as showing an inferior adaptation to the experiment. However, we are under no necessity of calling a sheep an animal in language, because there is nothing repulsive to us about a sheep; but a bedbug is alluded to simply as a bug.[3] Where, on the other hand, a positive interest applies, the insect is sometimes particularized as *Virginia creeper.* Any ideas that are thus

[3] In a southern district the word *bull* is tabu, and must be replaced by *male brute.* Generalization may be seen where there is no tabu, like the *sack, bag, stick* of baseball. But where there is a tabu, generalizing symbols are the rule. *Sowing wild oats* is one of the few exceptions.

at once interesting and more or less under tabu are apt to develop two classes of symbols in modern speech. One represents the yielding to the tabu, and giving the idea a vaguer symbol. Thus if a person is dismissed from employment we say that he *left his position.* The other class represents rather a defiance of the tabu. By this token it is said of the former employee that he *got through, got the sack, got the g. b.* This type of symbolism is especially apt to have a humorous coloring.[4]

If a person is drunk we describe him by generalizing symbols as intoxicated, or under the influence of liquor. On the other hand, alcoholism is quite apt to give rise to humorous and contemptuous interest. An especially full collection of the symbols thus arising has been published by Partridge. They are interesting here, to show the variety of associative processes through which symbolism may establish itself. Some of them are:

A passenger in the Cape Ann Stage
artificial
at rest
been lapping the gutter
been in the sun
been taking tea
brick in the hat
canonized (shot)
clear
disguised
down with the barrel fever
drunk as a drum, fish, fly, mouse, owl, rat, sow
edge on
electrified
feels his oats
glorified
in a difficulty
loaded for bears
making m's and w's
on the nipple
rococo
society slant on
starchy
stewed
whittled

Among the considerable number of neologisms are the following:

buffy
coxy-loxy
cronk
fogmatic
groatable
iskimmish
kisky
nazie
obfusticated
smeekit
smoled
stropolus
transmogrified

[4] "Everything which breaks over the social taboo is funny." Sumner, "Folkways," 573.

Very few of these would be widely understood, because the interest that gives rise to them is largely incidental. The tabu on alcoholism is comparatively weak, not strong enough to give rise to many generalizing symbols such as *liquor* or *strong drink*. The tabu is much more intense, and the positive interest greater and more universal in the field of sexuality. Its ideas are ever present to humanity and are of the intensest concern. The interest is both positive and negative, for both pleasant and unpleasant affects of great strength are associated with it. Hence we find both the generalizing and the particularizing types of symbols in wide variety. All the important motives of symbolism are present. These generalizing symbols are a part of the sex tabu:

bad	immoral
bad disease	lamb's fries
blood disease	(to) lie with
delicate condition	manhood
diseases peculiar to men	member
dread malady	organ
dress yourself (on which side)	privates
family way	safe (-ty)
(to) force	self-abuse
go with women	self-pollution
grave charges	unusual charges

A small number of jokes are founded on the theme of a vague or unfamiliar word being mistakenly interpreted in a sexual sense by the hearer.

Under many conditions, as among ordinary men intimately acquainted, the tabu is practically lifted so far as language is concerned. Then, as with the terms for alcoholism, motives of interest and distinction carry the symbols for sexual ideas almost to the limits of associative capacity. On the other hand, the tabu upon these is

particularly intense in "polite" society. There is in the recognized English language no transitive verb denoting sexual intercourse between willing persons. Under the tabu there are three, commonly understood and regularly employed. There are about nine such commonly understood words for the male organ, but not more than three or four for the female. As in the alcohol symbolisms, the number in occasional use is indefinite. Neologisms and proper names are frequently employed as designations. As in Partridge's list for alcoholism, most of the words have a different literal meaning which is not under tabu, thus belonging to the class we have called "secondary symbols" for the thing denoted. One of these is in some districts used to designate the male organ and in others the female.

Among uncultivated peoples, language tabu markedly affects many other ideas. One may see the same generalizing, supra-ordinate mechanism at work. Under the conditions in which the tabu is operative, smallpox becomes, like syphilis with us, *bad disease* (British East Africa). A snake becomes *creeping thing* (Bengal); *a long animal* (Malacca). A thief becomes *the unwelcome visitor* (Bengal); an elephant, *the great animal* (Malacca). A hare is called the *four-footed one; he that hides in the rocks* (So. India). The "camphor language," [5] a secret dialect of the Malay peninsula, makes of rice, *grass fruit,* and of a gun, *far-sounding.* Rice reapers may not call each other by their proper names, but only by the nonspecific *man, girl, old man, old woman* (Sumatra). "Noun-amnesia" is partly simulated in a

[5] Must be used while camphor is being gathered, even by those not actually engaged in doing so, to propitiate the tutelary spirit of the camphor trees. Frazer, "Taboo and the Perils of the Soul" (1914), 405.

secret language of Celebes, in which the hand is *that with which one reaches,* the ear is *that with which one hears,* a gun is *fire-producer.* Here is the same tendency to get away from the tabu association by using a vaguer term for the idea.

The particularizing symbols in these observations do not show the half-humorous, half-contemptuous character illustrated in modern slang. Instead, indifferent or flattering terms are employed. If a person is bitten by a snake, the Cherokee says he has been *scratched by a briar;* just as in contemporary speech a local designation for stepping in cow dung is to *cut one's foot.* If a snake is called a strap, it will lie still (Herero). Under the tabu, salt must be called *sweet peppers* (Madagascar); boars must be called *handsome men* (Java); smallpox is termed *pretty girl* (Java), *the prince of the averters of misfortune* (Sumatra), or, indifferently, *grains of corn* (British East Africa). (Frazer.)

Some of these symbolisms are rationalized by way of propitiation of superior or evil powers, or of keeping a necessary secret. For example, the "noun-amnesic" language of Celebes is said to be used to prevent the rice crop from knowing what is to be done to it. In others no rationalization is traced.

In the fable, not a single idea, but a short system of coördinated ideas is symbolized. Abstract and general principles are expressed by such concrete symbols as the dog crossing the stream with meat in his mouth, or the fox who invites the crane to dinner. When the system of ideas symbolized becomes more complex, it is called a parable or an allegory. They serve to make the symbols more vivid by putting them in a setting with other symbols to reinforce them. An exquisite example twice occur-

ring in recent poetry is that of the white signal lamps of safety welcoming a dying railroad-man beyond the grave.

Symbols may occur through any process of association. Things of the greatest interest are apt to have the greatest number of associations, or the intensest ones. Thus, ideas which are of the greatest interest, or make the greatest demand for distinctive names, will come to have other words stand for them. The symbolism may serve to emphasize the pleasant idea or to disguise the unpleasant one. We have thus reviewed the ways by which in language one idea comes to stand for another idea, and the principles in other classes of symbolism are similar.

Although one speaks of the kettle boiling, one does not identify the kettle with the water in any form of judgment or conduct, as by trying to drink it. When an idea symbolizes another idea in language, the symbolism is one of words only. The ideas are not identified in the conduct of the individual. The kettle is not a symbol of water except in words. A flag is a symbol of a higher order. It represents its nation for certain sorts of conduct. Salute and insult to it are salute and insult to the nation. The identification does not go beyond this, however. If it is dragged in the dust, the nation is considered as thereby insulted, but not as injured. All symbolism is this identification of one thing with another to a greater or less degree. This process of identification extends until we find beliefs that any act performed upon the symbol is thereby performed upon the thing symbolized. (Sympathetic magic.)

There are obvious limits to which this identification can usefully go. The symbolisms of language and of the flag are useful, those of sympathetic magic are wasteful. To introduce the psychic mechanisms of symbolism through

the common symbols of language has the advantage that the clearest symbols are much more numerous there than elsewhere. As students of dynamic psychology, however, we must leave this field to consider instances in which the identification begins to be reflected in judgment and conduct. This is seldom true of linguistic symbolisms as such; but a few such instances were described in the previous chapter (kidney —— shot, pp. 57–58). Where judgment and conduct are affected, the symbol is usually independent of its linguistic form.

Braune, in his collection of Old High German texts, quotes a group of symbolisms between religion and natural history. They are based on associations by similarity, and run in part as follows:[6]

1. Here I begin a discourse about the beasts, what they severally betoken. The lion betokens our Savior through his strength, and thereby is often mentioned in the holy writ. Thus Jacob said, in naming his son Judas, "Judas my son is the whelp of the lion." The lion has three things about him which symbolize our Savior. One is this: When he goes in the forest and smells the hunters, then he destroys the track with his claws so that they do not find him. Thus did our Savior, when he was in the world among men, so that the enemy should not understand that he was the Son of God. Then when the lion sleeps, his eyes watch. But in that they are open, therein he betokens our Savior, who himself said in the book of Song of Songs, *Ego dormio et cor meum vigilat.* That he rested in the human body and waked in the godhead. When the lioness brings forth, then the little lion is dead, so she keeps it until the third day. Then the father comes and blows on it, and thus it is brought to life. So did the Almighty Father wake his only begotten Son from death on the third day.

2. In the water of the Nile is a kind of serpent which is called the hydra, and is the enemy of the crocodile. For so

[6] Quoted from a contribution of the writer's to the *Journal of Philosophy, Psychology and Scientific Methods. Cf. also* Kelsey, "Physical Basis of Society," 1917, p. 157.

the hydra rolls herself in the mud, and springs into his mouth and slips into him. Then she bites his inside, until he dies, and she goes out whole. The crocodile betokens death and hell. The hydra betokens our Savior, who took upon himself the body of mankind thereto that he overthrew our death, and vanquished hell and returned victorious.

3. In the ocean are wonderful beasts which are called sirens and onocentaurs. Sirens are mermaids and are like women as far as the navel and from there up like birds, and should be very beautiful. When they see men traveling on the water, then they sing very sweetly until they are so charmed with the exquisite song that they fall asleep. When the mermaid sees that, then it goes in and destroys them. Therein it betokens the enemy, who seduces the mind of man to worldly lusts. The onocentaur is half man and half ass, and betokens them who are "ambitendent" (*zuivaltic*) in their tongues and in their hearts, and have the appearance of righteousness yet do not fulfil it in their deeds.

4. A beast is called the hyena, and is sometimes male and sometimes female, and therein is very unclean; such are they who first called upon Christ and then sought after the evil one. It betokens them who are not unbelieving, nor yet rightly believing. Of them said Solomon, "They who are ambitendent in their hearts are also ambitendent in their works."

5. Also is there an animal called *elevas,* that is an elephant, who has great understanding upon him, and no lust of the flesh. Thus when he wishes a child, he goes with his mate to the field, where grows the mandrake that is the child plant, so the elephant eats the plant, and his mate, and when they come together thereafter, then she conceives. And when she is to bring forth, she goes to a ditch full of water and brings forth there. . . . The elephant and his mate betoken Adam and Eve, who were innocent until they ate the fruit which God forbade them, and were free from all unclean desires. And as soon as they had eaten the fruit, they were driven forth into the misery of the present existence. The ditch full of water betokens that he said, "*Salvum me fac, deus.*"

6. There is a kind of snake called the viper, of her *phisiologus* relates, that when she is to become pregnant, . . . then she swallows the semen and becomes so desirous that

she bites off his genitals, and he straightway lies dead. Then when the young have grown in her womb, then they bite through her and thus go out. The snakes are comparable to the Jews, who polluted themselves with unclean acts, and persecuted their father Christ, and their mother, the holy Christianity. Also God commands us in one of the gospels, that we should be as wise as these same serpents. There are three kinds of snakes; one kind, when she becomes old, her sight fades; then she fasts forty days and forty nights, and all her skin loosens, then she seeks a stone with a hole in it, slips through, scrapes the skin off and thus rejuvenates herself. Another kind there is, that when she wishes to drink, she first spits out the poison. From this worm we should take the example, that when we are to drink the spiritual water, that is given to us from the hand of our Savior, we should first spew out the uncleanness with which we are defiled. The third kind is, when she sees the man naked, she flees from him; but if he is clothed, she attacks him. So also our father Adam, so long as he was naked in the garden of Paradise, the devil might do nothing against him.

It would seem as though the false notions of natural history had been devised to correspond with the religious beliefs. Apparently the symbols are not merely figurative, but imply the belief that causal relationship exists between the symbol and what it betokens. That is, the variable sex of the hyena and the variable dispositions of men are regarded as part of a single cosmic process; one produces the other, or both have the same cause. By so much they differ from incidental metaphors.

The following case, quoted by Scripture, shows an association-mechanism of much the same type as above, but with clearer evidence of its influence upon judgment. It is based upon a number-symbolism applied to the satellites of Jupiter:

There are seven windows in the head, two nostrils, two eyes, two ears, and a mouth; so in the heavens there are two

favorable stars, two unpropitious, two luminaries, and Mercury alone undecided and indifferent. From which and many other similar phenomena of nature, which it were tedious to enumerate, we gather that the number of planets is necessarily seven.

The identification with *seven* is carried far beyond the bounds of relevancy. It is "autistic thinking" of a scarcely higher degree than that of the Achinese fisherman who must not speak the word for *clear* because it might enable the fish to get "clear" of the net.

Every one knows the fairy tale of "Rumpelstiltzkin," who was destroyed when the girl pronounced his right name. Similar ideas about the name are very widespread. The name is so closely identified with its owner that whoever learns the name can thereby exercise power over him. For example, "the Wolofs of Senegambia are very much annoyed if any one calls them in a loud voice, even by day; for they say that their name will be remembered by an evil spirit and made use of by him to do them a mischief at night." Sometimes it is only that the name must not be told by the person owning it. The symbolism persists in modern speech, where we talk of injury to a person's *name*. The notion of power over a person thus acquired, is brought down to date in the expression *got his number*.

For more complete forms of symbolic identification we must turn to uncultivated peoples. The uselessness of such identifications in meeting the tests of experience is so patent that they do not long survive in the natural selection of ideas. Sumner mentions how a Hindu had to be married to a tree or a doll of cotton, before he could marry a widow.[7] The tree or doll symbolizes a wife from whom he is widowed on his part.

[7] "Folkways," 389. *Cf. also* 393.

As above with the name, a great function of identifying a symbol with the thing symbolized is, to confer power over the thing symbolized. The exercise of this power is "sympathetic magic." There are two kinds of sympathetic magic. Native Victorians draw a figure of their enemy on the ground, and destroy him by their incantations around it. This is called *imitative* magic, and proceeds through association by similarity, i. e., the similarity of the figure to the real person. It is a pervasive feature of primitive mental life. Holinshed gives the description of a Scotch procedure, familiar to students of Macbeth, which includes all the essential features (with some religious admixture); its quaint language makes it the more worth repeating:

But about that present time there was a murmuring amongst the people, how the king was vexed with no naturall sicknesse, but by sorcerie and magicall art, practised by a sort of witches, dwelling in a towne of Murreyland called Fores. . . . Wherevpon learning by hir confession in what house in the towne it was where they wrought there mischiefous mysterie, he sent foorth souldiers, about the middest of the night, who breaking into the house, found one of the witches rosting vpon a wooden broch an image of wax at the fier, resembling in each feature the kings person, made and deuised (as is to be thought) by craft and art of the diuell: an other of them sat reciting certeine words of inchantment, and still basted the image with a certeine liquor verie busilie.

The souldiers finding them occupied in this wise, tooke them togither with the image, and led them into the castell, where being streictlie examined for what purpose they went about such manner of inchantment, they answered, to the end to make away the king: for as the image did waste afore the fire, so did the bodie of the king break foorth in sweat. And as for the words of inchantment, they serued to keepe him still waking from sleepe, so that as the wax euer melted, so did the kings flesh: by the which means it should haue come to passe, that when the wax was once

clean consumed, the death of the king should immediatlie follow. So they were taught by euill spirits, and hired to worke the feat by the nobles of Murrey land. The standers by, that heard such an abominable tale told by these witches, streightwaies brake the image, and caused the witches, (according as they had well deserued) to be burned to death.

The following brief table of related procedures is collated from Frazer's material:

Tribe or Place	Symbol	Procedure and Effect
Ojibway	little wooden image	Stab to injure; bury with magic words to kill.
Malay	image of beeswax	Pierce eye to blind, etc., transfix and bury to kill.
Eastern Java	likeness drawn on paper	Kills by burning or burying it.
Torres Straits	wax effigy	Pierce with stingray; stingray will sting him in same place next time he fishes.
Lerons of Borneo	wooden image	Left in wood; as it decays, person dies.
Matabele	clay figure	Pierce with needle; will be wounded in same spot in next fight.
Bam-Margi Hindus	image of flour or earth	Cut with razor and pierce with pegs to kill.
Highland Scotch	clay image	Stick full of pins and glass (in heart if to kill at once, not otherwise); put in running water with head up-stream.

The intimacy of the identification with the symbol extends even to anatomical detail. It is reported that such implicit faith is placed in the efficacy of the procedures that persons have been seriously affected on learning that the magic had been directed against them. Per contra, images of children are specially treated by women to make

themselves conceive. These examples give no complete idea of the mental mechanisms in magic through association by similarity. The criteria of similarity often show a good deal of associative finesse. A pregnant woman of the Haida Indians lets eels and round stones slide over her abdomen to bring an easy delivery. To secure male offspring, a Saibai woman of Torres Straits will press to her abdomen a fruit resembling the male organ, giving it then to another woman who has had only boys. Eskimo children may not play cat's cradle, because later their fingers might become tangled in the harpoon line. There are many analogous tabus against the use of the spindle. Other interesting procedures deal with the food-supply. In one tribe, the men masturbate upon the clove-trees to secure the fertility of the soil. Malay camphor-hunters must not eat their salt fine, or they will find only small grains of camphor. A Brazilian tribe must always hamstring a deer before bringing it home, or they and their children will always be eluded by their enemies. When the men of one of the Dyak tribes are away fighting, the women must wake early or the men will oversleep; they must not oil their hair or the men will slip. They must prepare pop corn and scatter it on the porch every morning; thus agility will be imparted to the men, etc., etc. (Frazer). Josiah Moses directs attention to a similar element of sympathetic magic in the *doctrine of signatures.* "Bloodroot, on account of its red juice, is good for the blood; liverwort, having a leaf like the liver, cures diseases of the liver; . . . celandine, having a yellow juice, cures jaundice; . . . bear's grease, being taken from an animal thickly covered with hair, is recommended to persons fearing baldness." [8]

[8] *Path. A. Rel.,* 181.

A few symbols show combination of association by similarity with association by contiguity. An image of the person to be affected may be made with pieces of his clothes, or some of his hair or finger nails. In many cases, however, there is no attempt at constructing a physical likeness, but the charm is worked merely upon something with which the person has been associated by contiguity. This is the second main division of sympathetic magic, being called *contagious* magic. If any harm comes to an extracted tooth it may affect the previous owner. A tree to which Maoris used to attach the navel-cords of their children was embraced by barren women to obtain offspring. There are many procedures with the placenta for safeguarding the well-being of the child. Among the Melanesians, if a man's friends find an arrow which has wounded him, they keep it in a damp place, and with cool leaves, to make the inflammation subside. If his enemies find it, they put it in the fire to further inflame the wound. They "keep the bowstring taut, and twang it occasionally, for this will cause the wounded man to suffer from tension of the nerves and spasms of tetanus." This principle of a "hair of the dog that bit you" is reflected in the idea that injuries may be treated by treating the nail or knife by which they were caused. Frazer gives it as an especially pervasive superstition that by injuring footprints the feet that made them are injured. Thus, if a nail is driven into a man's footprints, he will fall lame.

Those things which have likeness to, or things which have been in contact with, the object to be affected, become symbolic representatives of that object, and acts performed upon them will be effective upon it. It is identified with them for good or ill, and they are symbols of it. These are the sole conditions that need be satisfied for a

symbolism of the most complete degree of identification to be established. In this way practically any symbolism is possible under the laws of association. Wherever ideas are associated, mechanisms of symbolism exist. Wherever ideas are pleasant or unpleasant, motives of symbolism exist.

Though the symbolism may be clear enough, we cannot always trace the process of association. What, for example, is the association between such terms as *cut, foxed, out of funds, hard up, whipped, whittled,* and the *drunkenness* they are used to denote? Or between this state and the neologisms like *cronk, spiffed, stropolus?* No doubt it would be possible to construct some kinds of association between them and drunkenness, but this would give no assurance that they had actually led to the symbolism. The idea *must* be associated with its symbol in some way, and apparently may be associated with it in any way; but we must not expect to be able always to trace the association. On the other hand, it is obvious that the possibility of symbolism cannot be excluded on the mere ground that none of the more obvious kinds of association can subsequently be traced. Who can be sure of what association led originally to the recently popular symbolism of *twenty-three?* Many explanations were offered. There was no doubt as to what the fateful number symbolized. To consider only symbols in which associative contact was clear for him who runs to read would inevitably result in a loss of a large portion of the facts. The criterion of symbolism is strictly this: how clearly and how far does the supposed symbol *function as a representative* of what it is supposed to symbolize?

Our first serious contact with this question comes in the problem of symbolism in dreams. The initial fact of

dream-symbolism does not seem open to doubt. Perhaps the simplest sort is the symbolic re-interpretation of sense-perceptions in the dream. This is a common occurrence, which Kipling's account of slumbers in a torpedo boat serves to illustrate.

> Anon, I caught the tramp of armies afoot, the hum of crowded cities awaiting the event, the single sob of a woman, and dry roaring of wild beasts. A dropped shovel clanging on the stokehold floor, was, naturally enough, the unbarring of arena gates; our sucking uplift across the crest of some little swell, nothing less than the haling forth of new worlds; our half-turning descent into the hollow of its mate, the abysmal plunge of God-forgotten planets. Through all these phenomena and more — though I ran with wild horses over illimitable plains of rustling grass; though I crouched belly-flat under appalling fires of musketry; though I was Livingstone, painless and incurious in the grip of his lion — my eyes saw the lamp swinging in its gimbals, the irregularly gliding patch of light on the steel ladder, and every elastic shadow on the corners of the frail angle irons; while my body strove to accommodate itself to the infernal vibration of the machine.

The writer has observed instances in which the eyes open in a struggle to awake from a nightmare-like state, and objects seen are accordingly misinterpreted. Thus, on one occasion, some irregular patches of light on the wall were thought to be the figure of a colleague watching for the dreamer to wake, and the idea was present: "It is fortunate that it is he, and not some one who might do me an injury while in this powerless condition." That is, a certain idea associated with the perception comes to awareness instead of the perception itself, and assumes "reality" in place of it. Now — and this next step is most important — just as perceptions may be represented in the dream under strange, though associated,

guises, so may ideas be represented in the dream in strange guises.

To learn this has not been so easy as in the case of perceptions. Where the idea has come as a perception through the eye, ear, skin, or perhaps, the digestive organs, we are much more likely to know what has happened and to be able to catch its distorted reflection in the current of the dream. However, these are the most certain demonstrations of symbolism that can be supplied for dream ideas. The best are those cited by Kraepelin. Here, as in the instances quoted in the last chapter, the dreamer is aware of intending to have one thing said, but actually something else is said. So far as the dream is concerned, what was actually said seems to mean just what was intended to be said.

> In a considerable number of cases, in which it was clear to me that I had dreamed and experienced an example of speech that I must attempt to retain, this example would at first, to my disillusionment, seem to present no deviation from the waking expression; so that there seemed to be no object in noting it. Only after continued and deeper reflection would the nonsense character of what had been said gradually become clear to me.[9]

What is said, therefore, is unquestionably symbolic of what was intended to be said. The dreamer means to say, "the voluntary furnishing of coal," and says, "the handling of voluntary coal," thus personifying the coal, as it were. As a rule, the expressions are in obvious and near association to one another. Illustrations are as fol-

[9] This is true of revelations under ether. The profound conviction of momentous truth is present, which, so far as it finds expression, is based upon slight support. Dr. Holmes kept on writing so long as he could control the pen. The sense of mystery solved was supreme; the written words recorded only that a smell of turpentine pervaded the atmosphere.

lows; they seem to lose nothing by translation. The first two fall in with the cases of re-interpreted perceptions:

Dream-form	Meaning
awakened from the cow-barn	(Dreamer heard knocking at a distant door)
a monarchical *coup de grâce*	(Dreamer heard coals being poured)
but at that she placed her feet to the left	She did it unwillingly
if one does not possess a proper intellectual trouser-seat	. . . possess thorough knowledge, industry
put off the intellectual shirt-collar	let one's self go, rest, live on a pension
he announces, that he has left the louse-cask of life	(Jesting obituary)
veteran clock (*Invalidenuhr*)	old clock
the handling of voluntary coals	voluntary furnishing of coal
sense of the variegated sixth	sixth sense of plants
the eye-sensations must also get up	in awakening, it is not sufficient that one wakes; one must also open the eyes
Pischdorf and Heinrichau have long been known to me as irresponsible	one can easily get confused there
in Freiburg the inside of the plate serves not for eating, but for the place	on the plate is a picture of Freiburg
can you do that with sympathetic construction-of-the-distance (*Fernbildung*)	can you see stereoscopically
thus it was possible for the old fisherman to keep himself sandbank-tired	in the day's journey he had so spared his strength that he could still save himself by means of the sandbank

Kraepelin's additional notes illuminate the following:

when one thinks of it, all the wild apple-galleries in N.	the small, unimportant collections

In the wild apple-galleries the general idea of the uncultivated, not to be refined through art or care, is replaced by the particular idea of the "wild apples."

it is really a punch-holding individual	(admiring exclamation at the sight of a beautiful landscape)

We meet the same turning of thought from the general to the particular . . . in the observation where the peculiar

adjective *punschhaltig* is apparently meant to have some sense like *intoxicating* or *charming.*

The most remarkable of all is as follows, not reproducible in English:

Ich lache mich zu Blei (I laugh myself to lead)	Ich lache Tränen (I laugh till I cry)

Here two allied expressions, *Ich lache mich zu Tode* and *Ich lache Tränen* appear to have arisen simultaneously. To the latter there associated itself the English equivalent *to cry* falsely changed over into the similar-sounding *to ply,* which in turn aroused the sound association to *Blei.* It would have been impossible to unravel these obscure connections, if the dreamer had not himself still been in a position to describe them.

Hollingworth reports some parallel observations, from the state of drowsiness:

Q. Let's hurry and get there by 10 o'clock.

A. That's easy. I could get there by a nickel to ten. (Spoken at 9.55.)

The (actual) rush of water heard through a porthole becomes transformed into the (dreamy) husky voice of a salesman trying to sell the drowsy one a suit. Subject wonders at the husky voice, and why the salesman has no more inflection.

Three (actual) blasts of an orchestra became (dreamy) movements of some huge bug which came sailing from behind the wings, suddenly alighting on the stage, first on the two hind feet, then bringing down the middle pair, and finally the two front feet with the final blast.

While trying to get to sleep the numbers of the subject's gymnasium locker kept ringing in his head, the left side seeming 52, the right side 36, and the back 5236. It seemed (dreaming) that if he could juggle these numbers into the right combination he could find a more comfortable position.

The above contain two transformations of sensory experience and two transformations of ideas. Thus "a nickel to ten" symbolizes five minutes to ten, and the locker numbers symbolize the position of the would-be sleeper.

The following more elaborate illustrations are quoted from Silberer:[10]

Conditions: In the evening before going to sleep. I endeavor in spite of my drowsiness to develop a train of thought; instead of getting further with it, I keep losing it. *Drowsiness idea:* I am climbing a precipice but slide back considerably at every step at which loose stones roll off. *Interpretation:* Without going into the content of the thoughts which I had, the hypnagogic scene represents in many ways the psychic process. It represents my mental endeavor in that it makes me mount a difficult precipice. It represents the uselessness of the exertion in that it makes me continually slide back and not reach the end for which I am striving (mountain top, i.e., clear comprehension of the idea I am pursuing). It illustrates the decrease in the apperception of my idea through the "fragmentation" (Abbröckeln) of the rolling stone. The connected train of thought "fragments" under my laborious steps.

Conditions: In the evening before going to sleep. *Eingenommener Kopf.* Dull headache. *Drowsiness idea:* I see a matchbox before me which is placed upside down (i.e., so that the heads of the matches are downward). *Interpretation:* the heads of the matches refer to my head. I feel myself inflamed, hence the matches, in whose heads there is also a latent fire which may burst out just as with me the expected inflammatory illness (influenza). The matches are in a wooden box, my head also is as though nailed up with boards. The matches have their heads downward; I feel also as though I stood on my head (blood-pressure).

The present writer can contribute dreams of his own, in each of which a definite symbolism was subjectively evident *at the time of the dream:*

The dreamer is examining some psychological apparatus, in consultation with the builder of it. The apparatus is inclosed in a case much larger than necessary, and the two consider the advisability of mounting some other instru-

[10] "Ueber die Symbolbildung," *Jahrb. f. psa. u. psp. Forsch,* III (1912), 687. *Cf. also,* "Symbolik des Erwachens u. Schwellensymbolik überhaupt," *Ibid.* 621–660.

ments in the same case. The builder points to an unoccupied portion of the case, "And then there's all this space to let."

This symbolism, i.e., "to let" instead of "available for another purpose," would serve as a perfectly ordinary figure of speech. The case is hardly so with the following, which is given with some details not relevant to the present point, but for later reference (p. 120):

Dreamer has just bought some supplies at the market, and walks down the station platform. The weather threatens a breaking storm. On the platform are two acquaintances, X and Y, who in the dream are bitter enemies, though actually not so. In this character they stand some distance apart on the platform, and do not notice each other. Dreamer first passes X (toward whom he feels actually a little antagonism), and makes a commonplace remark to him about the weather. Then passing Y (with whom he is on much closer terms), he looks again at the sky, sees it exceptionally black, and says, *referring to the weather,* "It looks like another scrap between you and X." Y smiles and agrees. Dreamer passes on, walking toward the hospital, and the rain begins, at once becoming a violent driving storm. Just as he passes Dr. R.'s house, he finds he has not brought the purchased supplies, and is greatly annoyed at not having done so. Then he remembers that he should not have brought them, since they are to be delivered where he lives; but the annoyance persists to the effect of waking him.

The conflict and enmity between X and Y become representative of the conflict of the elements. Again:

Dream: A copy of Stephen Leacock's "Nonsense Novels" is left in a store while the dreamer goes away for some purpose, now not clear. (The book is green; the actual copy in the dreamer's possession is brownish red.) On returning, and asking the shopkeeper for the book, the name of author can no longer be recalled; there is an embarrassed hesitation, which terminates in asking for the "book by Edgar Lavalle," with a pronounced feeling of "that isn't right, but it will have to do."

Obviously *Edgar Lavalle* functions as a symbol of *Stephen Leacock*. It happens that one fairly close associative connection can be reconstructed between the two, for Lavalle is one of the large universities in Montreal, and Leacock is at McGill, the other university. No such hypothesis can be offered for *Edgar*. Nor can anything probable be offered as to how *Stephen Leacock* came to be temporarily lost, though various possibilities are present to the writer's mind.

A wholly nonlinguistic symbolism is the following:

Dream: A game of tennis (played tennis the day before) suggests particularly a game played with Dr. X six or seven years previously. The tennis ball is of unusual form, suggests a human embryo. The idea comes, "Is the child worth saving?" with the answer, "No, it is not," and the ball is returned over the net with a peculiar stroke, to have the effect of killing it. (Not the "killing" stroke of tennis, but a twisted one.) There is plain awareness in the dream of the child-ball symbolism.

In the following, dream-symbols are explained by another character in the dream:

Dream: Te. is discussing with the dreamer the conduct of Mu., who has behaved dishonorably. In the course of the discussion, Te. asks the question, "Could you wear that?" Dreamer indicating that he does not understand, Te. explains that it means, would the dreamer consider it proper to act in such a way as Mu. has done. Later, of another aspect of Mu.'s conduct, Te. asks, "What kind of a curtain is that?" and to dreamer's query explains that this means what kind of a justification is that for Mu.'s conduct.[11] Dreamer laughingly remarks that he "Cannot keep up with all these new slang expressions; you will have to use six months' old ones on me."

This is a good example of the "dissociative" symbol-

[11] *Cf.* the expression, "cloak" for one's actions.

ism of Chapter VI (p. 218), it being patent that the dreamer's main personality does not understand the symbolic expressions until they are explained by the split-off trends of the dreamer's mind which compose the personality of Te. (*Cf.* footnote to p. 189.)

We have no reason to suppose that the kinds of association that give rise to symbolisms in dreams differ particularly from the kinds of association by which symbols are established in waking life. Waking, we call the dollar a piece of lettuce; in the dream, accordingly, a capitalist might well be represented by a market gardener tending greenhouses full of the product. We say that a drunken person is sewed up, has a turkey on his back, is gilded. In the dream we could expect to see him actually sewn in a sack, as a fugitive poultry thief, or personating the ill-fated little boy at the coronation of the mediæval Pope. It might seem far-fetched, but it would be only using a symbol perfectly current in normal speech, to dream of a person eating bits of cloth, who in waking life shows great talkativeness. In dream symbolisms, as in others, " reasonableness " of the associative connection is quite superfluous.

Such is the evidence that the dream and allied states are at least capable of presenting in symbolic form ideas and experiences which are recognized. The most satisfactory evidence of the symbolism involved is that of direct subjective awareness of the symbolism; this appears in nearly all the above instances. These cases of subjective awareness seem most frequent in drowsiness or in very light sleeping states, and are rare in ordinary sleep. Let it be clear in what terms dream symbolism is being defined: Dream-ideas have hallucinatory vividness, that is, they are identified with reality. Dream-

ideas appear as the equivalents of certain other ideas with which they are associatively connected. *Edgar Lavalle* symbolizes *Stephen Leacock; a nickel to ten* symbolizes *five minutes to ten; Psypen* symbolizes *psychische Typen.* One of Prince's cases desired to record the details of a *vision* as soon as it appeared.[12] In the process she produced an elaborate poem. It gave to the vision a very personal and sentimental interpretation. But this interpretation was not consciously in the mind at the time of writing. The writing described a symbolism that was in the mind, but outside of consciousness. It is suggested by such observations that dream-ideas in general, perhaps all the remainder of them, are also symbols of associated ideas, in which the connection is obscured.

Since the dream-symbol is presumed to be associated with the thing symbolized, a preliminary mode of approach is to note the dream-content as remembered, and then observe the ideas which, in the waking state, come up in association with this content. It is supposed that somewhere among these will be found ideas of which the dream-ideas were representative. This is a branch of the psychoanalytic procedure, which consists in thoroughly examining mental contents of all sorts, so far as they can be conveyed in terms of language.[13] For a given dream-idea, a number of associated ideas may thus be recorded. There is no immediate means of knowing which of these ideas underlay the dream idea. The check upon the correctness of interpretation so arrived

[12] *Unc.*, 204ff.

[13] Pfister defines as follows: "Psychoanalysis is a scientific method adapted to neurotic and mentally diseased, as well as normal individuals, which, through the collection and interpretation of associated ideas (but avoiding hypnotism and enforced suggestion), seeks to determine and to influence the mental trends and mental contents lying below the threshold of consciousness," *D. psa. Met.*, 16.

at, is that the interpretation be put to some further test of symbolism than the simple fact of association.[14]

Freud's hypothesis is that there exist in the mind large groups of ideas of which the waking personality does not have awareness. They are not like reflex or automatic mental processes, such as walking, of which we are unaware because they are instinctive or habitual. These ideas are too painful for the personality to contemplate, and they do not come to awareness because the mind is able (as is presumed), to oppose resistances to them which prevent their reaching awareness. Thoughts of certain kinds do not overcome this intrapsychic resistance, and the personality does not become aware of them. They are tabu. We shall speak of them here as *submerged ideas;* they are parts of the *unconscious.* (Chapter V.) One of the properties of sleep is that during it this intrapsychic resistance is somewhat diminished, and the submerged ideas come nearer awareness. But, if they came to awareness in too near their true form, the sleeper would wake in horror (nightmare). Therefore, they reach awareness only as symbols, which may in themselves be pleasant, or at least not so unpleasant as to interrupt the process of sleep. Thus a girl with submerged erotic feelings does not dream herself ravished, but as running along a street in the red-light district. (Pfister.) The mind is like a city whose inhabitants are by day engaged in the peaceful pursuits of legitimate commerce; but at night, when all the good burghers are sound asleep in their beds, out come these disreputable

[14] The boldest applications of the method have been made by its originators. Critics of the method object that any test of symbolism is not, or cannot consistently be applied. Freud and his followers are led to a general conclusion which covers at once the character of all dream-symbolism, and the motive for it.

members of the psychic underworld to disport themselves in their own peculiar and unseemly fashion, decking themselves out in fantastic costumes, in order that they may not be recognized and apprehended. (Campbell.)

A physical model to illustrate the process could be constructed of the following elements, the whole constituting a thermostat with automatic cut-off for the source of heat when it accidentally becomes too great.

In the model as outlined (p. 107), the analogies are,

Electric action	Dream-ideas
Resistance of electrolyte	Intrapsychic resistance
Sleep	Gas-flame

The operation of the analogy would be as follows:

1. Electrolyte cold. Its resistance too high for any current to pass.

Waking state. Intrapsychic resistance too high for submerged ideas to come to awareness in any form.

2. Gas-flame lit and electrolyte heated; its resistance thereby diminished so that some current can flow through.

Sleep established. Intrapsychic resistance thereby diminished so that submerged ideas can come up to awareness in the form of symbols.

3. The more the electrolyte is heated, the lower its resistance and the more current can pass through.

The greater the diminution of intrapsychic resistance in sleep,[15] the nearer to their true form the submerged ideas can come to the surface of awareness.

4. When the electrolyte is heated to a certain degree, it operates a thermo-regulator which checks the gas-flame, keeping the electrolyte

In order that the dream may act as the "guardian of sleep," the intrapsychic resistance must not become too low, as this would allow the submerged ideas to come to awareness in too near

[15] It should perhaps be said here that intrapsychic resistance is not supposed to be proportional to the depth of sleep. The factors on which it depends are not known.

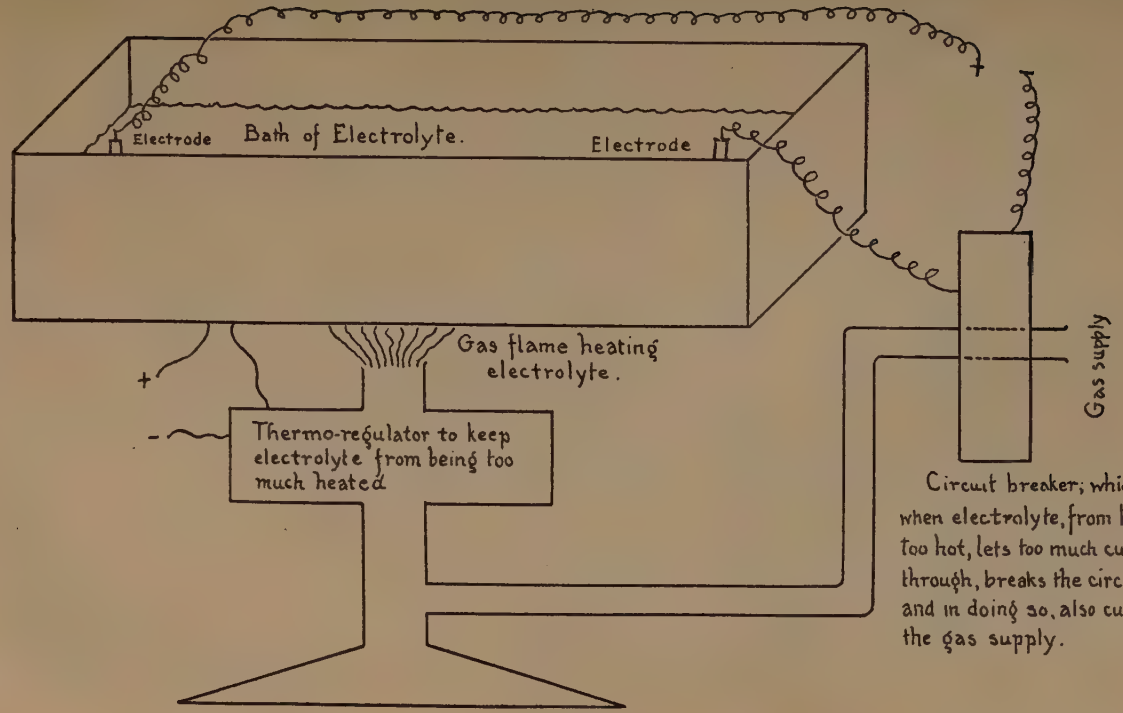

Electrode
Bath of Electrolyte.
Electrode
+
Gas flame heating electrolyte.
+
-
Thermo-regulator to keep electrolyte from being too much heated
Gas supply
Circuit breaker; which, when electrolyte, from being too hot, lets too much current through, breaks the circuit; and in doing so, also cuts off the gas supply.

FIGURE 3

from getting too warm and letting too much current through.

5. The thermo-regulator for checking the gas-flame sometimes fails. In this case, the electrolyte becomes over-heated and lets more current through than the apparatus is made to stand. Then the combined circuit-breaker and automatic gas cut-off operate, interrupt the current, and extinguish the gas-flame.

their true form, which would awaken the sleeper.

If the intrapsychic resistance is so diminished that the submerged ideas come to the surface in too near their true form, i.e., insufficiently disguised by symbols, the affective reaction is so great that the sleeper wakes, usually in a terror.

What, then, are these terrible creatures of the mind, which, "like the Demons in whose company Afrasiab made his voyage down the Oxus, must be suffered to slumber, or we perish"? The human organism is not in the habit of going into terror-paralyses in the presence of mere ideas. Freud considers that the ultimate sources of the submerged ideas are in trends of quite early life, many of which are most repugnant to the adult personality. For example, we should find more marked in childhood that "germinal possibility" of abnormal sexual conduct, which William James long since attributed to most of us. If such ideas come to us in waking life, we do not act on them, and they do not trouble us. But in dreams, when ideas seem real, such ideas (or sometimes their dream-symbols) may arouse in us all the affective reaction that their actual experience would arouse in the waking state.

As the dream thus presents a realization, it is naturally a realization of some trend in the mind. Admittedly,

special trends are not often discernible in dream-ideas as we see them. But we know the dream transforms by symbolizing, and the trends would very probably be distorted beyond immediate recognition. Two cases in which it was not beyond recognition may be given. Since they contain identifying data, it is necessary to disguise them somewhat.[16]

(General waking situation: Dreamer has thought of going to New York by a train called "The Owl," but finally buys a ticket for the "Paul Revere Express.") Dream: Passing along the station platform he sees a train in all respects identified with the "Owl," having the cars and engine which distinguish it, but designated by no name, and not on the track from which the "Owl" regularly leaves. This train is now felt to compare very favorably with the "Paul Revere Express," and regret is felt that the dreamer is not going on it. Later, and apparently nearer the waking state, the actual situation is felt to be far preferable. Later still, when nearly awake, the train is identified to awareness with the name of "The Owl." The "Paul Revere Express" was continually present as such during the dream, with no symbolic distortion.

This dream is interesting as showing, in regard to the "Owl," the beginning of a symbolic distortion not yet developed far enough to make the symbol unrecognizable. The train seen on the platform is the "Owl" in all of many distinguishing particulars, except name and track. It is hardly a symbolism, but it shows an early stage of the process by which symbolism may take place.

August Hoch has modified Freud's statement to say that the dream represents "a difficult situation with an

[16] A hint of this disguise is derivable from the following *bon mot* of the *Lustige Blaetter:* "Sehen sie, liebe Freundin, das ganze Leben gleicht einem Bahnhof. Alles hastet an einander vorbei. Jedem ist's Wurscht wo die anderen hingehen. Und wenn man endlich einmal glücklich eingestiegen ist. sitzt man — im falschen Zug!"

attempt at adjustment." This is certainly true of many dreams; it is not impossibly true of dreams in general. But the dream is content to offer very childish adjustments, of which the following is an example:

Dreamer hurries to catch the train to Fitchburg, but on arriving at the station finds that a friend who was going on that train is not on the platform; the train has apparently gone. The station-agent is near by, and the dreamer inquires of him, but that official refuses to tell him whether the train has gone. It is of importance for the dreamer to reach the train, and this attitude on the part of the station-agent annoys him greatly, with the result that he begins to awake. At this point there comes over the dreamer a distinct feeling of desire that the station-agent should refuse to answer the question; for, if he tells the dreamer the train has gone, there will no longer be any chance of his reaching it, but, if the dreamer can keep from knowing that it has gone, he may be able to catch it after all.

This shows in elementary form the common human frailty of shutting one's eyes to truth with the idea of preventing it from affecting one. It is a side of autistic thinking that we have had to discard in living by experience. The dream makes continual use of reasoning like this.

The sum of evidence hardly warrants the supposition that all dream-symbolisms occur because the things symbolized are unpleasant. It is much more likely that the dream-state has, as such, the property to represent ideas to awareness in symbolic form. Silberer supports a conception of this kind. Of drowsiness symbolisms he says:

These auto-symbolic phenomena appeared as fatigue-phenomena, and as a reversion from a more difficult mode of thinking to an easier and more primitive one.[17]

[17] "Phantasie u. Mythos," *Jahrb. f. psa. u. psp. Forsch.* II (1910), 605. Quoted by Pfister.

Elsewhere he says:

If we examine the evolution of the symbol, we see the symbol appear when the mind of man reaches out for an idea that is still beyond its power to grasp.[18] We also see the symbol appear when a previously higher intellectual faculty is lowered (as in dreams and mental disease). In both cases the mind loses the grasp of the idea in its higher [more abstract] form, and retains only that of a lower [more "tangible," symbolic] representative. . . . The special service of Freud, Jung, and their followers has lain partly in demonstrating the influence of the affective life in bringing about this "apperceptive insufficiency" of the mind.[19]

It is a common saying that if one is hungry one dreams of sumptuous fare, and, if thirsty, of a cooling draught presented to the lips. Sometimes, on being about to taste, the illusion disappears, and the sleeper wakes. Sometimes the action will be carried out, and the dreamer will enjoy the hallucinatory experience. It seems worth while to raise the question whether it is not a general rule for the dream to satisfy any direct organic needs that come thus into its consciousness. If the dreamer feels a physiological thirst, the dream can always supply water to quench it. But if such a desire is present in the dream and not satisfied by the dream, this is perhaps a proof that the desire in question does not represent the sensation of an organic need, but is a symbolic representation of another need. The writer has quoted elsewhere a dream of standing on a mountain side down which flows a gushing waterfall; the dreamer is thirsty, but does not drink. The suggestion is made that, if it were a real organic thirst, he would drink. The fact

[18] The representation of deity in the guise of man, animals, or monsters, is presumably an example of his contention.

[19] "Ueber die Symbolbildung," *Jahrb. f. psa. u. psp. Forsch.* III (1912), 675, 681. (Matter in brackets inserted by author.)

that he does not drink is evidence that the thirst is symbolic of another longing that is not so simply satisfied, and against which other trends in the personality are powerfully opposed.

Like the delusions of mental disease (p. 211), the dream persistently goes contrary to the aims and wishes of the waking or dreaming consciousness. One is forced to conclude that the dream may be determined by trends that are not a part of the waking or dreaming consciousness. It is because of such trends that the dreamer is prevented from satisfying his symbolic thirst. There would be no opposition to satisfying an actual one; we saw in Chapter II that internal conflict does not appreciably affect such a trend as this.

In summary, the principal points to be noted in regard to dream-symbolism are: (1) It is sometimes but not commonly traceable through direct awareness of the thing symbolized. (2) The symbols may stand in any associative connection with their originals, and this connection does not need to be reasonably apparent. (3) The chief reason why symbolism plays its part in dreams is supposed by some to be because the ideas symbolized would themselves be incompatible with the continuance of sleep. (4) Such ideas concern affectful experiences and trends of which the subject may be aware, but is not necessarily so. (5) They may concern trends of early life which are no longer present to the waking consciousness. (6) When the dream deals with material of this sort, it regularly depicts some kind of adjustment of the trend, though often quite an absurd one by waking standards. (7) Most dream-symbolism is preferably regarded as the result of simpler and less critical modes of association among ideas than obtain in waking life. This

obviates the necessity of supposing a strong emotion back of the symbol. (8) If a simple organic need is represented in the dream without being satisfied by the dream, this is *prima facie* evidence that the craving is symbolic of some other trend, which has strong counter-trends opposed to it.

CHAPTER IV

THE CONTINUITY OF EMOTION

If I see a beautiful painting, my eyes perceive a complex of colors and more or less familiar outlines. At the same time I experience a feeling of pleasure, which is aroused by the experience of the painting, just as my visual perceptions are aroused. I may move nearer the painting, so as to get a better view of it; that is my motor reaction to seeing the picture. The feeling of pleasure manifests my affective reaction to seeing it. A similar affective reaction occurs if I think of some beautiful view or other pleasant experience. Mental activity, whether of perception or imagination, is in some degree pleasant and unpleasant. These feelings of pleasantness and unpleasantness are called affects. I have a pleasant affect on looking at the beautiful picture.

In other words, the sight of the picture is *associated* with a pleasant affect. This association of particular affects with different experiences is to a large extent common to all men. The taste of sugar is pleasant to people in general; that of quinine is unpleasant. Such pervasive associations of certain affects with certain perceptions is to be mainly accounted for by natural selection. The organism to which beneficial situations are also pleasant has a better chance of survival. But among human beings there are also great differences in the affects associated with similar perceptions. What is en-

joyable to one may be indifferent or abhorrent to another. A person's affective reactions are not even constant. To see the happiness of others is pleasant to us when we also are happy; too often unpleasant to us when we are not so. Thus a perception or idea is not always associated with the same affect. A given perception or idea may be very closely associated with a certain affect. But that affect is not an inherent part of the perception or idea. It is not inseparable from them.

No one knows, and few care, why Peter likes his steak rare and Paul likes it well done; why John buys no red neckties and James buys no other. None of these preferences is of much significance for life. We accept them with a *non est disputandum.* More significant are cases in which the affects are out of proportion, or even opposed to, the affect common in normal persons. A man may dislike chicken or parsnips so strongly that he does not tolerate them as an article of food. A woman may collapse in terror at the sight of a small and harmless domestic animal. We have here a disorder of the affective reaction which interferes more or less seriously with meeting the ordinary demands of existence. The disharmonies we shall discuss are principally like those quoted, in which a greater affective value (pleasant or unpleasant) becomes attached to a situation normally more indifferent. When an abnormal degree of affect is thus associated with an experience, it is called *affective displacement.*

The above examples might be produced by two kinds of affective displacement. The first type of affective displacement occurs when a general mood of happiness gives to ordinary occurrences its own happy coloring. Any underlying mood can thus distort, for better or

worse, the affective value of whatever situations arise while it persists. Besides its frequent manifestations in normal life, it is evident in the psychoses. Mild manic and general paralytic cases in early stages show underlying happy states. By virtue of such a condition, a mild manic case was able to bear up exceptionally well under a severe bereavement. Underlying states of melancholy are seen in the depressions. The apathy of dementia praecox toward the outside world makes important occasions indifferent. This is affective displacement of the general type.

Another general source of affective displacements must be briefly considered. If, in the upper layers of society, bitter personal enemies meet at a social function, they are apt to comport themselves with the appearance of normal friendship. Social etiquette demands that their antagonisms be put aside. If the hostess suffer from violent headache, or have a special personal sorrow, it is her duty to conceal it, presenting only her gayest demeanor to her guests. In their beginning, such dissimulations may be artificial and voluntary; the person knows and wills their occurrence. But the "society smile" is not necessarily a voluntary one. A gradual habit of reacting in the prescribed way develops, by which the natural affect is automatically covered by the opposite one. Then we have what may be called *affective compensation.* The social conventions are like the sheet of tissue paper, which, if placed over a red and gray card, causes the gray portion to appear of the color opposite, or complementary, to the red. There appears on the surface of character the opposite emotion from that naturally belonging to the personal situation. Human character is frequently marked by affective compensations of this

kind, in which there is no voluntary or recognized substitution of the opposite affect. The hypocritical Pecksniff comes in time to believe his own affectations of virtue, and may do so from the outset. "The flatterer," writes Pfister, "conceals through toadying character an evil disposition." Dickens gives us another fine type, particularly where he brings to the surface the deeper self-love, elsewhere compensated in self-abasement.

"I am well aware that I am the umblest person going, . . . let the other be where he may. My mother is likewise a very umble person. We live in a umble abode, Master Copperfield, but we have much to be thankful for. . . ." [Chapter 16.] "And having such a knowledge of our own umbleness, we must really take care that we're not pushed to the wall by them as isn't umble. . . . 'Be umble,' says father, 'and you'll do!' . . . I am very umble to the present moment, Master Copperfield, but I've got a little power!" [Chapter 39.] "Umble! I've umbled some of 'em for a pretty long time back, umble as I was!" [Chapter 52.]

Again, to shield tender and sensitive feelings in one's nature there may grow up a defensive wall of brusqueness, as the armor grows upon a crustacean to shield the vulnerable portions from injury. Prudishness, combined as it so often is with marked autoerotism, is another of these compensatory reactions. Still another is shown by the person who suffers great affliction in life, yet whose wit is the life and soul of his company. This feature has been thought, not without reason, to have its pathological analogue in certain manic states. There a mood of extreme joviality may ensue upon circumstances not at all calculated to give rise to happiness in normal persons. Where, on the other hand, there is a definite dis-

ease process, one has always to reckon with specific poisons as a source of the "euphoria," or sense of well-being. Thus the exaggerated well-being of general paralysis, though in the presence of serious illness, should not be regarded in the same light as these "affective compensations." This seems also true of the *spes phthisica* (optimism of the consumptive), though Hart cites it as a probable instance of affective compensation. If the displaced happiness of tuberculous patients were mainly a compensatory reaction to the gravity of the disease, we should expect chronic diseases in general to show it as fully. More probably the tuberculous poisons themselves have a specific rôle in this euphoria, like the euphoria of alcoholic intoxication, only less pronounced and more lasting.

The whole process is summed up by Hart as "the exaggerated appearance in the superficial layers of the mind of the opposite quality" to that properly belonging to the "complex." The pertinent point is that this exaggeration of the opposite need not be a studied dissimulation on the part of the individual. It exists, and very likely originates, outside the field of awareness and insight.

Buried eroticism comes to the surface in the guise of fear; we shall meet some examples of this. Adler has built an entire psychology of the neuroses upon affective compensation. He interprets neurotic manifestations as miscarried endeavors of the personality to compensate for feelings of inferiority. As the timid man whistles to keep up his courage, so would the personality of the neurotic overlay the feeling of inferiority with a tinsel of confidence or self-esteem. The symptoms represent a superficial show of impudence, foolhardiness, or obsti-

nacy, overlying a fundamental timidity, shyness, and dependence.[1]

There is no more important element in the diagnosis of character than to distinguish whether a marked trait in the observed person is compensatory, or fundamental.

We are to be concerned here with the more specific types of affective displacement. Their origin is less evident at first sight. They are exemplified by my friend's very individual and marked aversion to eating chicken, or by resistances which I experienced in 1903 toward visiting the Englischer Garten in Munich. In the midst of what is otherwise an at least passably well ordered affective life, there crop out these useless, and at times quite inconvenient, disharmonies of affect with situation. There is no general underlying mood on which they are based. Common examples from normal life are the phobias for various harmless organisms, like caterpillars, toads, spiders, cats, and also snakes (where there is no knowledge of their possible harmfulness). One may show inordinate anger at losing a game upon which nothing is staked; or at some (really very good) advertisements of a popular chewing-gum; or resistances toward reading a certain magazine. The displaced affect attaches specifically to a single, or to a very small range of topics. An unprejudiced observer will usually be able to multiply such examples from his own experience.[2]

[1] Adler, *Monats f. Päd. u. Schulpolitik* (1910), H. 9. (*Ref.* Pfister.)

[2] We have already demonstrated transplantations of feeling in considerable number. In the previous section we spoke of pleasures in astronomy, stamp-collecting, "nature-healing," affection for a nurse, which were all exaggerated, that is, not to be explained by the intrinsic value of the object. Previously we had learned to know Scheffel's Ekkehard as a remedy for hiccoughs; washing became a great state function; machines, horses, the nose, the legs of pigeons and of children took on the character of frightful objects; a rubber tire and the nipple of a pump were endowed with an irrestible attrac-

These disharmonies of affect with apparent situation are also quite marked in dreams. The most frequent seem to be those in which profound emotion is aroused by apparently trivial occurrences. A characteristic instance was quoted in a previous chapter (p. 101), where the intense anger at an inconsequential lapse of memory was sufficient to awaken the sleeper. Two others are the following:

Dream, shortly after the sinking of the *Lusitania,* and the night after mislaying a cap: A large ocean liner, not clearly the *Lusitania,* is nearing port, but damaged and sinking, (not clearly) through a torpedo. Dreamer, with others, wishes to leave the ship, but is prevented from doing so by having lost his cap. Rushes in trepidation to his stateroom to hunt for it; can no longer find his stateroom. Conscious of having plenty of other headgear, but must have this particular piece. At conclusion, the ship is very near to land, even between the harbor docks, and there is no longer pressing necessity for leaving it.

Dream, spring of 1911: Dreamer is visiting a colleague, R., who is something of a bibliophile. R. leaves the room for a moment, and dreamer glances through one of his books. At first this seems to be an account of banking methods of a century ago, but transforms into an account of the vengeance taken by a man (who thought he had been defrauded by another of a sum of money) upon the latter's family. This consists in administering to them a compound consisting of "some black substance, arsenic and sand," which causes them all to expire in great pain. The margins of the pages bear grotesquely appropriate illustrations, one of them a skeleton vomiting. A state of nightmare *Angst* supervenes during the reading of this passage, and subsides without the dreamer's waking, as R. reënters. Dreamer hands the book to R., with words like, "This is about the limit," to which R. makes a smiling half-assent. After a few other episodes, the dreamer wakes, the *Angst* having entirely subsided.

tion; a kitten and a gas-mantle compulsively stimulated the desire to attack; the figure of Christ . . . became surrounded with tremendous feeling, and later indifferent again. Pfister, *D. psa. Met.,* 176.

In explanation of these common affective displacements in dreams it has been suggested that they are based on a general loss of the *standards* of affective response which govern our waking life. This does not seem the best explanation, because the affective life of dreams is not a generally disordered one. Regularly we react to the natural events of dream life as we would to the natural events of waking life. When there is such affective displacement in a dream, it regularly refers to some narrow, specific topic, as in the first dream above to the loss of the cap, in the second to the contents of the book. These emotional displacements stand out so unquestionably just because the affective life of dreams is not generally different from that of waking life.

In the second chapter we saw that play on the sound of words, which is represented in the conduct of the savage, in the ideas of children, in the symbols of our dreams, and in shaping the delusions of mental disease, also develops a special kind of wit in the form of the pun. Affective displacement, likewise traceable in normal life, in dreams and in the psychoses, develops, when artificially employed, another and higher type of wit. Satire, and its lesser brethren, irony, travesty and parody, are the children of affective displacement.

In the Lilliput and Laputa of Swift, the satire consists in giving to trivial ideas an air of consequence and solemnity. Rabelais, on the other hand, tends more to satirize the pompous and self-sufficient by representing it in comic and ridiculous terms. The scheme of satirical wit is to present a mental content ordinarily associated with one kind of emotion, but in such a form as to arouse with it the opposite emotion. Thus Lanigan's well-known "Threnody," concerning the death of a potentate

called the *Ahkoond of Swat,* has the elegiac meter, and for the most part elegiac diction, but displaces the naturally tragic note through an interspersal of puns, in the following manner:

> . . . For the Ahkoond I mourn,
> Who wouldn't?
> He strove to disregard the message stern,
> But he Ahkood n't. . . .
>
> Tears shed, tears shed like water,
> Your great Ahkoond is dead!
> That Swats the matter! . . .
>
> He sees with larger, other eyes
> Athwart all earthly mysteries —
> He knows what's Swat.

The conventional parody takes something associated with respectful emotions, preserves enough of its form to clearly suggest this original, and introduces elements that, like the puns above, arouse humorous feelings. Thus the verse form of Hiawatha has lent itself largely to parody such as the well known one of Mudjokivis and the mittens.

Music, as well as language-forms, serves as the original for parody. Parodies in the form of music can be appreciated only by the very musical, but an effectively witty displacement can often be made from emotional music by trivial words attached to it. Thus the nonsense quatrains "I'd rather have fingers than toes" and "I wish that my room had a floor," gain distinctly in humorous value through being set to the hymn-tune of "St. Denis" ("Heirs of unending life"). Another nonsense stanza ("See those two ducks at play") has grown up about the tune of "Moscow" ("Come Thou Almighty King").

The most familiar motive from "Carmen" has been set to some doggerel beginning:

> Toreador, he smoka da bum cigar
> Standa on da corner, hoppa on da car, etc.

This interchange of the sublime and the ridiculous is what constitutes wit through affective displacement. In most direct parodies, like the above instances from Hiawatha, the original element is the sublime, and the displacing element is the ridiculous. A further example is the pidgin English version of "Excelsior." Though the result is the same, it is a somewhat different mode of travesty to start with a trivial episode and clothe it in dignified phraseology. This is the same difference above noted between Swift and Rabelais.

Stephen Leacock is a prose master of such wit through indifferent situation and affectful response.

> I passed a flower in my walk today. It grew in the meadow beside the river bank. It stood dreaming on a long stem. I knew its name. It was a Tchupvskja. I love beautiful names. I leaned over and spoke to it. I asked it if my heart would ever know love. It said it thought so. On my way home I passed an onion. It lay upon the road. Someone had stepped upon its stem and crushed it. How it must have suffered. I placed it in my bosom. All night it lay beside my pillow . . . Today in my walk I found a cabbage. It lay in a corner of the hedge. Cruel boys had chased it there with stones. It was dead when I lifted it up. Beside it was an egg. It too was dead. Ah, how I wept. . . . ("Nonsense Novels," 116–117, 119.)

The "Little Willie" verses which enjoyed a recent popularity are probably the simplest form in which the mechanism of affective displacement has ever served the ends of wit. They consist uniformly in depicting a tragic

situation with an indifferent or comic reaction to it. The following are familiar examples:[3]

Willie hung his baby sister,
She was dead before we missed her.
"Willie's always up to tricks!
Ain't he cute? He's only six!"

Willie fell down the elevator;
He wasn't found till two weeks later.
All the neighbors said, "Gee whiz!
What a spoiled child Willie is!"

This artificial displacement of affect is decidedly the chief mental mechanism of wit. We have illustrated the natural occurrences of affective displacement in normal life, and in dreams, and have mentioned it in the psychoses. We saw that these displacements were sometimes explicable on the ground of underlying moods like elation or melancholy. But we found other instances in which this facile interpretation is clearly impossible. The intense distaste for eating chicken, the aversion to the Englischer Garten, my marked prejudice in favor of any one who has a certain manner of speech, and all such specific likes and dislikes, must have originated in mental events bearing specifically upon the ideas with which they are associated.

For example, my friend's aversion to eating chicken originates with an unpleasant experience which he had with one of the species in early childhood. The writer had no aversion to the Englischer Garten as a small child, until one day some one to whom he was attached nearly incurred arrest by picking for him a *verboten* flower that he wanted. When next to be taken to the Englischer

[3] A collection of such verses bears the title, "Ruthless Rhymes for Heartless Homes." Eugene Field's "A Little Peach in the Orchard Grew," is a more classical example of this type of displacement.

Garten he objected, suppressing the reason, reluctantly admitting the truth of the *Gouvernante's* surmise: *"Weil man da nicht Blumen pfluecken darf?"* This was the origin of a resistance which was still operative on revisiting Munich some thirteen years later, and through which the place seemed the more appreciated upon rediscovery. A prejudice against a young and popular acquaintance is based upon the fact that superficially her appearance brought to mind a boy of far from admirable character, whom the writer knew as a child. The prejudice in favor of people with a certain brogue originates with very good friends who have this accent. Walter Dill Scott describes how he greatly enjoyed some indifferent stories read during the playing of music of which he was especially fond. He termed it a "fusion" of the affects associated with the songs and the stories. (His practical application of the process was the principle of never allowing to creep into an advertisement matter that in any way brings an unpleasant feeling to the reader. For, no matter what the logical relation is, e. g., insects trying in vain to get inside a food package, the unpleasant feeling will "fuse" with the idea of the food, and make the whole memory of the advertised article an unpleasant one. One should rather group pleasant associations about the article, as pictures of persons greatly enjoying the food.)

The general fact which these cases illustrate is as follows: If an experience is associated with a pronounced affect or emotion, of whatever character, that affect or emotion will tend to become associated also with other experiences themselves connected with the first experience. Because my friend had an unpleasant experience connected with a chicken, he now dislikes chicken as food.

Because the writer had an unpleasant experience associated with the Englischer Garten, he many years later felt a distaste for going there. Because the child has once made himself sick with walnuts, he has a persistent aversion to eating walnuts thereafter. Thus the affective displacements in the reactions to the chicken, to the Englischer Garten, to Miss X, to persons with a certain dialect, and to the songs, are a "*transference*" from a related and originally affectful experience. These transferences have been observed in different settings, and different names applied to them. Scott called it fusion; Ferenczi and others, dealing with its pathology, have called it *Uebertragung,* from which American writers have taken the term *transference.* The original experience may be said to "load" [4] associated ideas with an affect that does not properly belong to them. My later visit to the foreign park, objectively indifferent, is "loaded" with unpleasant affect, derived from an unpleasant experience in connection with this park many years before.

Thus one way in which affective displacement may occur is through *loading* from unpleasant original experiences. Somewhat as an intensely hot or cold object will heat or cool objects around it, so will intense emotion associated with an idea radiate emotion to ideas associated with it.

The simplest way in which such transference could take place would be this. When the idea of revisiting the Englischer Garten comes up, it calls to mind the previous experience, and this arouses, in connection with itself, its unpleasant affect. There is no reason why this should not happen in any such case. It probably happens in very

[4] *Cf.* Pfister, "Gefühlsbelastung," *D. psa. Met.,* 173.

few. The visit to the Englischer Garten was unpleasantly anticipated without any immediate awareness of the previous visit, though of course it did from time to time come to mind. The prejudice against Miss X. was evident some weeks before its unquestionable origin became clear to the writer. Although in these cases the original experience still comes to awareness, it need not do so. The *loaded* affect is manifest without any immediate awareness of its original source.

Unquestionably there are many other cases of "unreasonable" likes and dislikes, for which no such originating experience can be recalled at all:

> I do not love thee, Dr. Fell,
> The reason why I cannot tell.

This opens the question, whether the dislike of Dr. Fell is to be traced to an unpleasant experience, say, of some person who looks like Dr. Fell, even though one has no longer any awareness of such experience. We know that there does not need to be any *immediate* memory of the original experience, for affects loaded from it to persist. Need there be any awareness-memory of it at all?

In answer, there is good evidence that this loading or transference of affects occurs, when the original experience of it has been, in the accepted sense of the words, completely forgotten. A mental impression is said to be *forgotten,* when it can no longer be brought to awareness; when it is no longer one of the ideas which form our conscious knowledge; when it can no longer be aroused as a part of what Janet and Prince have called our *personal consciousness.* Now, as we shall later see more fully, there are some mental conditions (such as hypnosis, and the passive states favorable to psychoanalysis), in

which things can be remembered, which are forgotten to the ordinary waking life. By penetrating to these inaccessible stores of memory, it has been possible to identify forgotten experiences, from which ideas that should have been indifferent in daily life were still being "loaded." An instructive example is the following, given by Tait:

A subject had an intense and unmotivated dislike of the color brown. He was instructed to start with the idea *brown,* and to write words at the rate of forty per minute, to the beats of a metronome. At the twenty-ninth and thirtieth beats came a block, with no words written. Then starting again with the word *brown,* there came, after about thirty words, the last few of which deal with a recent dissecting room episode, the following succession:

Sore, blow, strike, wound, die, man, strike, jaw, blood, red, dark, red, brown, blood, man, strike, fall, back, blood. . . .

At this point there comes back to the subject a hitherto lost memory of a head-injury with bleeding, that had occurred in childhood, and which is described in some detail. There is no reason to question Tait's interpretation that the horror of the reddish-brown blood seen at that time radiated through later life over brown colors in general. In certain color-experiments this subject notes that a feeling of hatred accompanied the remembrance of the browns, "which spread itself over the whole experiment with colors." But the original association of brown and unpleasantness had been buried out of memory. A special procedure was necessary to bring it back.

A case described by Morton Prince had a phobia for towers and church steeples, especially those in which bells might ring. As in the previous case, no associations to explain the anomalous emotion were present to ordinary

awareness. Memories elicited under hypnotic conditions threw no light upon its origin. It was finally determined through the medium of automatic writing. While the patient was under hypnosis, narrating some irrelevant memories of her mother, her hand, into which a pencil had been put, wrote rapidly:

"G. . . . M. . . . church and my father took my mother to Bi . . . where she died and we went to Br . . . and they cut my mother. I prayed and cried all the time that she would live and the church bells were always ringing and I hated them."

She wept while writing, but did not know why, nor what her hand had written. After coming out of the hypnosis, the patient was questioned as to the events referred to in the writing. A clear account of them was given, *not accompanied by special emotion,* nor in the childish phraseology of the writing.

Her mother, who was seriously ill, was taken to a great surgeon to be operated upon. . . . The chimes in the tower of the church, which was close to her hotel, sounded every quarter hour; they got on her [the daughter's] nerves; she hated them; she could not bear to hear them; and while she was praying they added to her anguish. Ever since this time the ringing of bells has continued to cause a feeling of anguish. . . . She could not explain why she had never before connected her phobia with the episode she had described.

This case, like that of Tait, presents an affectful reaction to a properly indifferent stimulus, with a definite, though forgotten, mental cause. It brings out more clearly an additional feature of interest. "So long as the memories were described from the viewpoint of the matured adult personal consciousness, there was no emotion." In the "adult personal consciousness" the episode in which the phobia originated is not loaded with

affect; bell-towers are so loaded. The affect originally associated with the experience has apparently left it. It has now no abnormal emotion for waking awareness. It is "de-emotionalized," as Ernest Jones suggests. The emotion has been transferred, veritably "siphoned" from the original ideas connected with the mother's illness, to the idea of towers in which bells may ring.[5] The original idea is drained dry of the affect with which the properly indifferent one is "loaded." Affective transference can thus go to much greater lengths than the simple "fusion" described by Scott. We can no longer use the simile of a body radiating its temperature to its surroundings. It is a complete *Uebertragung* ("carrying-over"), which empties of affect the primary idea, and loads the secondary one.

From the outset we have regarded affects as independent mental processes. They are associated with ideas and perceptions by the same principles of association that bind ideas and perceptions to the motor discharges of voluntary behavior. In this way, the affect related to some definite experience could naturally become associated with perceptions and ideas related to that experience.

The essential thing is to conceive the emotional process as a *reaction.* When we perceive an emotion, we perceive a physiological process; but opinions differ as to its nature. The James-Lange theory suggested changes outside the nervous substance, as in the blood-vessels or glands. A strong objection to the latter view has lately been brought forward by the work of Cannon, who finds that the glandular accompaniments of varying emotions, such as fear or anger, do not essentially differ. There is

[5] Prince follows it through many intermediary ideas, which need not be gone into here. *Cf.* "The Unconscious," 389ff.

a further objection to supposing that the process we perceive in emotion is a vasomotor one. The time requisite for vasomotor responses is about two seconds. If the emotion is the perception of this vasomotor activity, it should require at least two seconds to perceive an emotion, after the thing arousing the emotion is presented. Nakashima [6] appears to have found the actual time required for the perception of an emotion to be less than this,[7] and not much greater than the time required for reacting to the sensation. *Blue* would thus take only a little longer time to look pleasant than it does to look blue. This is in further accord with the view of Cannon, that when we perceive an emotion, what we perceive is something going on in nerve-centers. The feeling of pleasantness is the awareness of a certain central process, as much as the image of one's breakfast table is the awareness of another process in the brain. This central process is the emotional reaction.

The burnt child dreads the fire; that is, having once been hurt by the heat of the flame, he is later frightened by the perception of its light. Throughout mental phenomena there obtains such a principle, that a reaction proper to a certain (primary) stimulus, may later be aroused by another (secondary) stimulus, which secondary stimulus has been in some particular association with the primary one. The application of this principle to emotional reactions is what we are calling affective transference. Let us follow it quickly through some of its other manifestations, as studied in the laboratories of the Russian investigators, Pawlow and von Bechterew.

[6] *Am. J. Psych.*, 20 (1909), 187–193; *Psychol. Rev.* 16 (1909), 303–339.

[7] *Cf. also* von Bechterew, *Objektive Psychologie* (1913), 110.

If one administers to an animal an acid-tasting substance producing directly a salivary reflex, and at the same time shows the animal a flash of light for example, later on the flash of light alone will suffice to elicit the salivary reaction. If the prick of a needle has elicited the reflex withdrawal of the hand, then a simple touch, previously ineffective, will also elicit the withdrawal. If one receives an electric stimulus eliciting the plantar reflex and at the same time is given a color-stimulus, later on the color-stimulus alone will elicit the plantar reflex. The same is found for responses that are not reflex, but conventionalized. If bending the finger is required as response to a given light, and this light is combined with a certain sound, the sound itself will come to induce the bending of the finger. Or the sound may be used as the primary stimulus, and then, a secondary light-stimulus being combined with it, the light-stimulus alone will induce the bending of the finger. Here the association between the light and sound stimuli (by which they induce the same reaction) is established through their simultaneous occurrence. But a less direct association may also be effective. The regular finger-response to a rhythmical sound may, after the cessation of the sound-stimulus, be again elicited by lights which are associated with the sound-stimulus simply in that they follow the rhythm of the sound. (von Bechterew.)

Responses which the associated secondary stimulus has thus derived from the primary stimulus are called *conditioned* or *associative* responses.

In affective transference it is an emotional reaction that is substituted for the glandular one in the case of the salivary response, or the voluntary reaction in the case of the bending of the finger. There are, however, two rather

noteworthy differences between the conditioned motor responses just cited and the conditioned responses of affective transference. Von Bechterew makes the point that the responses which are made to the secondary stimulus alone do not, as a rule, reach the intensity of the responses made to the primary stimulus. Thus, the effect on breathing, of a light-stimulus secondarily associated with a sound, is less pronounced than the effect on breathing of the primary sound-stimulus. This rule does not obtain in affective transference. We saw that the originally affectful memories (primary stimulus) in the bell-tower case had lost their affect, were "de-emotionalized" (p. 130). Their affect had been siphoned to bell-towers (secondary stimulus). In these siphoning processes the primary experience is drained of its affect and the secondary experience becomes loaded with the entire emotional response originally attaching to the primary experience. Indeed, it is not impossible that there are accessions to the original affect; so that the secondary experience now carries more affect than ever attached to the original one.

Again, to establish a conditioned response in the above motor fields, a certain amount of drilling appears necessary. The secondary stimulus is systematically combined with the primary one, five, ten, twenty or more times, in order to establish conditioned responses to the secondary stimulus.[8] This seems much less the case with affective transference. Scott enjoyed his stories immediately on hearing them with the liked music. Tait's case did not require a series of bloody head-injuries to implant a dislike of brown colors. As the child need be burned

[8] Watson, "The Place of the Conditioned Reflex in Psychology," *Psychol. Rev.* 23 (1916), 96–97.

by the fire only once to dread it, so there may be a pronounced transfer of likes and dislikes to secondary stimuli, though these have been but infrequently or remotely associated with original, primary ones.

Both the above points indicate that the principles of association do not in themselves cover the facts of affective transference. In the first place, they would simply endow the loaded, secondary experience with the same kind of affect as was carried by the primary, originating experience. They would not provide for the siphoning process, in which the loaded experience has a greater degree of this affect than is retained by the originating one.

In the next place, we saw also in our studies of symbolic association (Chapter III), that any association might give rise to symbolism, but only under certain conditions was this path taken. In like manner, any path of association is also an avenue by which affective reactions may invite transfer. But if this path were always open, affects would siphon indiscriminately between any associated perceptions, and our emotional life would have no stability at all. So that, while the paths of association provide ways along which affects are transferred, they do not provide the "motive" power which makes the transfer. This relation, not well understood, may be partially surveyed.

The "siphoning" of affects is quite frequent in affective transference. The memory of the original Englischer Garten episode was clearly less unpleasant than the transferred resistance to revisiting the place. Tait's case had a phobia for brown colors; not for a barn, for blood, or for head-injury. The originating experience had been lost; its affect was siphoned into the experience of browns.

A prime condition of affective siphoning appears to be that an original affectful memory fades from awareness. As this happens, any associated experience loaded from the original experience takes on greater affect in awareness than now attaches to the original experience. For example: the unestimable boy-friend has played no part in the writer's life for many years; he was seldom thought of, and without special emotion. Now comes the young woman resembling him, and lights up an antagonism to herself greater than is now felt toward the original, or is remembered to have ever been felt. As shown also in Tait's case, the affect attaching to an experience fading or lost from awareness is in unstable equilibrium. It is ready to siphon at once into some associated experience that is preserved, like the brown colors in Tait's case, the bell-towers in Prince's. In the case of the boy and Miss X, the affect siphons into a new experience, in which the conditions for associating the experiences are met by the resemblance of the two persons.

Ferenczi calls such affects attaching to lost experiences "free-floating," and remarks, in a different terminology, that the personality appears not to tolerate such free-floating affects; they tend to attach to something else. The apparently unmotivated waste of affect is nothing but a transference, in which long forgotten psychic experiences exaggerate the proper reaction.

The outstanding feature of these affective displacements is that an experience may fade or be lost from awareness, while its affect persists. Apparently, it does not necessarily attach to something else that is in awareness: witness the phobias, which may be intense though the sufferer can assign no cause for them. A mental cause of which the patient is not aware may afterward be

determined.[9] Usually, however, the affect attaches to something else which is in awareness.

On examining the conditions in which affectful memories disappear from awareness, one cannot fail to be struck by the frequency with which the affects involved are of an unpleasant character. Nearly all the instances above quoted were of this sort. It does not seem possible to escape the conclusion that there is something in the very unpleasantness of these ideas that helps their disappearance from awareness. The psychoanalytic school, at least, has made no attempt to escape it; quite the contrary. One of their fundamental tenets is the repression of disagreeable ideas as such. Although the idea be repressed through its unpleasant affect, the affect itself does not remain submerged. It comes to awareness again, "loaded" on to some otherwise indifferent idea. Then one naturally would expect that this "loaded" idea would be equally subject to repression for its unpleasantness. A great deal of forgetting may be, and has been, interpreted as the result of association with unpleasant experiences. In the cases of phobias for bell-towers, and for browns, however, it is clear that the primary unpleasant experience was repressed, but not the "loaded" one. Unpleasantness may be an important cause of repression, or loss from awareness, but it is not, of itself, a sufficient cause.

This repression of an experience from awareness, with the accompanying transfer of its affect to something else, accounts especially for the displacement of unpleasant affects. If a pleasant affect is transferred, there is not the same loss of the original memory from awareness. One may, indeed, have a feeling of pleasantness while unaware of the underlying cause of this feeling, just as one

[9] Prince, "The Unconscious," 29.

may have an unexplained phobia; but the cases of it are not so striking.

Two characteristic examples of the transference of pleasant affects have been cited. The songs and stories of Walter Dill Scott, and the pleasure of the writer in hearing a certain brogue belong to this class. Here both the original and the loaded experience are present to awareness. They may be conceived as "fusion" or "radiation" of affects, because the pleasantness of the loaded experience is not greater than that of the original experience. It is not a siphoning which drains the original experience of affect.

The siphoning of unpleasant affects, being often accompanied by the loss from awareness of what we should expect to remember, has perhaps attracted an undue share of attention from the siphoning of pleasant affects, which is not especially characterized by repression of the original experience. When a pleasant affect is siphoned from one experience to another, the memory of both is regularly retained. In this form, affective transference is one of the large dynamic factors in human life.

To illustrate by a crude but clear example: a young man, quoted by Sadger, presented all through his life an intense interest for the urinary function. It led him to grotesque perversions (e.g., collecting the urine of boys in sponges and conveying them to his mouth); an especial desire was to watch boys urinating. It filled somewhat the same place as the sexual interest fills in normal persons. Except for getting food he appeared to have no more fundamental interest. Such a trend is obviously unsuited for proper adaptation to life. It has infinite possibilities of trouble for him and those who surround him. But, by the side of these trends, he showed some others clearly

associated with the urinary interest. At the age of two and one-half years, his greatest joy was in the indefatigable watering of plants with a little water can he had succeeded in begging. At three and one-half years, one of his Christmas presents was a longed for toy pump. It alone delighted him for the whole evening. At four years, he must go to every pump in the watering place his family visited, and work it himself. He knew every pump in the town; sprinkling carts were another fad. In later years came a more serious fondness for every kind of aquatic sport; it especially delighted him to be dashed over with spray from a moving boat. Any of these interests had genuine potential usefulness. They lead to success in horticulture, in hydraulic engineering, in navigation. In a better balanced individual, the abnormal interests attaching to urinary functions would be transferred to such useful activities as these. Thus Jones makes mention of cases in which these and associated interests have delevoped into bridge-building, architecture, sculpture, type moulding, cookery. The difficulty with the patient is that no sufficient transfer of this kind has taken place. His interests and pleasures have remained "fixated" at infantile stages. They have not been outgrown, that is, undergone the normal developmental transference.

There is, indeed, no great abnormality about the early childhood trends of this patient. In children, the excretory functions are an important source of organic pleasure, which is by no means always lost in later life. Next to the taking of food it is their most important organic satisfaction. Soon they meet the tabu with which their elders surround the functions. This reinforces the children's natural concern with them, so that the normal

interest of children in the excretory functions is no small one. While among adults obscene talk usually deals with sexual functions, among children it deals rather with excretory functions. Orgies of excrementation are described in story and rhyme. They have a never failing resource in the sports and variations of the function which their ingenuity devises.

The more mature the mental development, the more subdued these interests become, except in isolated cases. They are prominent in the obscene talk of uncultivated adults, as they are among children, but on higher intellectual levels they are replaced more and more by sexual topics. In conduct, the shifting of interests from the excretory to the sexual is distinctly marked. The pleasures in the excretory functions dwindle or become aversions, and erotic reactions become a paramount source of organic satisfactions.

It is not a new concept to speak of this as a transference of interest from excretory to erotic functions.[10] If we mean simply that what was formerly an excretory interest has now reinforced an erotic one, it needs no further elaboration. More is to be said, however, of the process by which this takes place. In the cases of affective transfer hitherto discussed, we were concerned especially with unpleasant affects. We found a tendency to load an indifferent situation with an affect, while the original one faded from awareness. This had the air of a "defense reaction," to keep the unpleasant idea from entering awareness, or at least to keep it from entering there as unpleasant. One can at least understand this as an effort of the mind to free itself from unpleasant

[10] *Cf.* Pfister, "Umschaltung" or "Transposition," *d. psa. Met.*, 181.

feeling, just as an unpleasant physical object, like a fly, is brushed away. This defense mechanism cannot operate with the transfer of pleasant affects. There is no analogous motive for repressing ideas that give pleasure.

There has, indeed, been a tendency to regard the adult loss of the infantile excretory interests as a repression from the unpleasant; but this seems a mistake. Though there is a conventional tabu about them, the conversation of intimates indicates that they are seldom regarded with less than indifference, and that distinct, if vestigial, pleasures often remain in them. The repression that exists about them is not "unconscious" or even personal; it is superficial, a social one. Sumner relates the desire of privacy for such purposes to an entirely foreign trend of sympathetic magic. No enemy must be given a chance to get possession of something so intimately connected with the person, or through it the latter might be done a mischief. (*Cf.* pp. 94–95.)

By rejecting the view that these trends are repressed owing to unpleasantness, one avoids the complication that the new interests of eroticism are not unpleasant, but pleasant. In fact, all the diffuse organic satisfactions of childhood are now centered about this greatest satisfaction. Pleasant affect is siphoned from the excretory trends, and they are left but slightly pleasant, indifferent, or somewhat unpleasant. How pleasant they will be left depends simply on how complete the affective siphoning has been. If all the pleasure originally attaching to excretory functions has made the normal shifting to the erotic, the excretory functions will be unpleasant, because all things have some degree of both pleasant and unpleasant qualities.

The comparative adult indifference to these infantile

satisfactions does not come therefore through repression from unpleasantness. It comes because their pleasantness is siphoned over to new functions, which it is more important should be pleasant for the organism.

This transference of interest from the excretory to the erotic sphere is the most complete and pervasive transference that takes place. If it does not take place completely enough, we have infantile fixations such as are seen in Sadger's case. If it develops in wrong directions, if the interest is transferred to wrong objects, perversions like homosexuality and fetishism occur. In any case, the original trend does not take on its unpleasant character until the pleasant affect is well established in its new attachment. Deer's flesh is not disdained by the man-eating tiger until he has tasted a man.

The same must be said of the minor trends which are thought to derive something from the infantile excremental interests. It is possible, as Sadger says, that a fountain originates as an artistic symbol of the stream of urine. He mentions artistic creations in which the identification is altogether plain. But this association hardly takes place because of unpleasantness in the excretory function; rather because of pleasantness. It is the pleasantness of these things to us that makes primitive or cultured men see them where they do not otherwise exist. In so far as the symbolism of music, sculpture and the like really has this origin, it is not because people wanted to get rid of the underlying idea, any more than one speaks of *bone* or *plunk* from a wish to get rid of the underlying idea of *dollar*. In a previous chapter we surely saw that pleasant affects have an equal rôle with unpleasant ones in the formation of symbols; and it is the former which are at work here.

But now we meet the process of symbolism in another phase. In Chapter III we studied symbols as the conveyers, or at least as the expressions, of objects or ideas of objects. In language and in magic,— two main divisions of symbolism considered — the word lion takes the place of the animal, a wax image takes the place of one's enemy. Something easy to control is made equivalent to something not so easy to control, because of real or fancied usefulness in so doing. This is *rational symbolism.* But now we are saying, in effect, that Miss X symbolizes my unadmired boy acquaintance, in that the *affect* she arouses in me is derived from him. She is not identified with him in any way rationally, cognitively; it is only affectively that she is identified with him. The *fact* that she looks like him does not even come at once to awareness. The *feeling* that she arouses is the dominant, for a while the only feature of the association between the two. In this way we shall now consider a thing as symbolic of something else, when it derives its loaded affect — pleasant or unpleasant — from that something else, although it may not be identified with it in any other significant way. This we shall call *affective symbolism.*

There are rational and affective elements in all symbolism. Words of language describe the objective world to us well enough, but they do not carry at all the affect of the actual experiences they connote. Their symbolism is dominantly rational, and but slightly affective. The water can of page 138 has indeed a rational association with the urinary interests; but in the boy their more prominent common feature is the affective, pleasurable one. Interjections do not symbolize ideas or objects directly, but strictly feelings. The symbolism of the wed-

ding ring is primarily affective, that of love; few people think of the ring as a rational symbolism, indicating without end or eternity.

The bell-towers of Prince's case are the aptest of affective symbols, since they serve solely as carriers of affect, and have but irrelevant rational connection with the underlying cause of that affect. The brown colors of Tait's case are another affective symbol, loaded with affect from an original experience that is itself forgotten. As a symbol must not be greater than the thing it symbolizes, we must not apply the term affective symbolism to all cases of affective transference. It would be no more absurd to make the oak a symbol of the acorn, than to speak of love as an affective symbol of infantile autoerotism. The term affective symbolism applies to those cases in which the association develops as a carrier of the affect attached to the original experience, and serves no other purpose.

The common factor in the material quoted, is that an experience properly indifferent is loaded with affect from another experience which was properly rich in affect. In order that the secondary experience may be loaded with affect from the primary one, some association between the two is necessary. Direct temporal contiguity is the simplest kind of such association. It has not been prominent in the examples given. Scott heard the songs and the stories simultaneously. Pfister cites the case of a boy who, having just learned to masturbate, does so during a school session at a time when a boy next him is being whipped. The affect attaching to the masturbation is radiated over to the whipping; so that after this experience, his masturbation is preceded by a stereotyped fancy of a boy, or occasionally his sister,

being whipped. The whipping became obsessively associated with the masturbation through temporal contiguity.[11]

We have seen more of association by similarity. Prince's case, from disliking one kind of bell-tower, dislikes other kinds. Tait's case, from disliking one particular brown, dislikes other browns. The writer, disliking the memory of a certain boy, dislikes a young woman who looks like him. This opens the question of how much similarity, or what kind of association, is found between the primary and the secondary experience, when the latter bears a transferred affect, or serves as an affective symbol of the former.

How much must a building suggest a bell-tower for Prince's case to fear it? How much brown may there be in a color-mixture without Tait's case feeling dislike toward it? Would they dislike people whose names were Bell, Tower, or Brown? Would I have disliked Miss X if only her voice and not her face had resembled the boy's? When the "conversion" of an affective experience into a hysterical symptom (e. g., a peculiar body-movement) takes place, what are the grounds of association, in contiguity or similarity, upon which such conversion may be based? How close a rational association is necessary for affective symbolism?

Apparently the connection may be quite remote or even figurative. Pfister cites some cases that show this. A well educated woman, married for some months, ardently desires children, but the husband is impotent. The unity of the household is threatened. She has hysterical pains in the abdomen, and also an obsessive idea

[11] This contiguity is representative of an important source of fetishism.

of burglars (*Einbrecher,* "breakers-in") in the garden. Now this possibility is present to any householder so fortunate as to have a garden, but it does not lead to a morbid fear. This comes in the case of a woman who wishes children but cannot have them because her husband is impotent. The idea of burglars receives this load of affect from the disturbed situation in which the woman finds herself. It comes up insistently as an affective symbol of the sexual difficulty. The analogies of sexual intercourse to breaking in through a garden are sufficient to establish it. The phobia disappeared on the understanding of this relationship, and the fortunate cure of the husband's impotence. We cannot here go deeply into the circumstance that the idea of burglars carries fear when the thing back of it is a wish. It is part of the same process by which the conventional old maid worries about the man under her bed. Sexual feelings as yet unrealized are often associated with a large element of fear, which may even interfere seriously with the establishment of sexual relationships. In this particular case, the idea of burglary is itself one to provoke some fear-reaction, the more when obsessively present.

In another case, a teacher was sensible of a sudden and unaccountable attraction for one of his girl-pupils who had previously not especially affected him. It appears that he is temporarily in love with a young woman who is descended from a famous poet, though not bearing his name. The surname of the pupil is the same as the poet's, and her first name is the same as that of the young woman. As his ardor for the latter cools, the pupil again becomes indifferent. By virtue of the related names, the affect for the young woman radiated

to the pupil. Quite unbeknown to the teacher, the pupil was thus an affective symbol for the young woman; just as, unbeknown to Prince's patient, bell-towers were affective symbols for ideas connected with the mother's illness.

A multiple succession of affective symbols is shown in the case of a twelve-year-old girl characterized by an excessive dislike for the ordinary housework she is called upon to perform. She does not mind setting the table, making beds, watering flowers, or running errands, so much as dusting, cleaning the bird cage, and the like; i.e., especially things that have to do with house-*cleaning*. The most distasteful thing for her is to "cut off the stems of the flowers because their sap-tubes are plugged." In the midst of embarrassment ensuing upon this confession, the girl appreciates an analogy between these dislikes and her chronic constipation from the earliest childhood, resisting all medical treatment. Hereupon the constipation disappears, and she becomes normally interested in her housework. The house-cleaning served, in its unpleasantness, as the affective symbol of its bodily correlate. As in other cases quoted, there was no awareness of the association until special methods of examination brought it to awareness.

The same girl had a habit of peeling skin from her fingers. This is quite frequently regarded as a vestigial autoerotic reaction. The girl had actually masturbated at eight years, and the finger-peeling is apparently a reaction to its discontinuance. She was broken of the finger-peeling by a physician, only to develop at once a marked avidity in eating raw carrots. On arriving spontaneously at the analogy between this and her previous practices, the hunger for carrots ceased. Shortly after-

ward appears an inordinate desire to learn the violin. "*Geige spielen*" is actually a colloquial equivalent for masturbation. As the violin was purchased, she was noted again to be peeling her fingers, but this ceased with the possession of the violin. In these instances the crude autoerotic affect represented in the earlier masturbation is simply carried over into less harmful or possibly good reactions. The violin would be here what the water can is to Sadger's case (p. 138).

A close parallel to the burglar phobia presented above is shown by a phobia in a girl of 14½ years, which breaks out on the stopping of masturbation. It will be understood that this blocking the outlet of erotic tensions creates for her somewhat the same situation that the impotent husband causes in the other case. The phobia is of insects; that they will climb up her back; have their delicate wings injured. There was also a fancy of decomposing in a grave with insects crawling about her. It appears that she had been taught erotic practices by a servant girl and her lover; they had told her it would feel "as though insects were crawling up her body." They had also explained to her the significance of the hymen. (Delicate wings; *cf. Hymenoptera.*) As before, the affective symbol of the blocked trend carries a morbid fear.

It has been remarked by psychiatrists that self-accusatory ideas, of whatever nature, very frequently have masturbatory practices as a basis. The individual does not accuse himself of the masturbation, but of something else. Pfister brings a very clear illustration of this in the case of a boy who had for six years stolen from his mother without compunction. When he began to masturbate, this did not trouble him, but he awoke to great

penitence for his dishonesty. Pfister observes that this transference of self-accusation usually appears when masturbation has been stopped in consequence of warning threats. (*Cf.* above.)

Here the bond of similarity that establishes the affective symbolism is again vague; anything that will serve as a carrier for self-accusatory feelings will serve as the affective symbol.

Affective symbolism is the key to the interpretation of the affective displacements of dreams. As described on page 120, the dreamer goes into paroxysms of horror on reading the details of some century-old murders. The probable supposition is, that what the dreamer is looking at is really something other than an account of sins in bygone ages. The dreamer is really facing some fact of his own existence which is of tremendous affectful value. Only, by the fundamental tendency of the dream to symbolize, it is presented in this distorted form. What this underlying affectful idea is can seldom, if ever, be told directly. Prince's case could not tell what was the idea underlying her waking phobia of bell-towers. Careful records of ideas associated with the symbol may enable one who is practiced in such studies to select the idea which has loaded the dream-episode with its affect. This is actually what the psychoanalytic method attempts to do.

In the "Lusitania-cap" dream again, it is evident that the cap without which the dreamer may not leave the sinking ship is no ordinary piece of head covering, but something very important for the dreamer's existence. He will not trust himself to the mercy of the waves without it. To one knowing the general circumstances of the dreamer at the time, the probable symbolisms are a

good deal clearer than in the previous case. They may be left to the reader's ingenuity. We shall recur to some other points in this dream under the head of Dissociation.

When, in the dream, properly indifferent things appear of great moment to us, the best explanation is that they are representing something really of great moment to us. This carrying of their affect is the most striking way in which the dream-ideas symbolize the underlying ones. The cap would thus be the *affective symbol* of something very essential.

The term *affective symbolism* is thus applied to a mental process which carries a special affect derived from some other mental process. The examples quoted have mostly been of a kind in which one could trace a process which had carried the affect previous to the symbol in question. What the violin carried last, had previously been carried by eating carrots, peeling fingers and masturbation. It seems quite right to consider that anything to which pronounced affect attaches in later life of the individual has derived this affect from something else which previously held it. The sum of affectivity continues; the mental process which carries it is subject to much alteration.

It will be a matter of opinion how far one should apply the term affective symbolism to the manifold hobbies, fads and interests that people cultivate, often far beyond the bounds of usefulness. Affective transference, radiation, fusion, siphoning, absorption, extension,[12] they certainly are. These come especially, if a fundamental trend or interest is prevented from transferring itself along the usual lines of its development.

[12] McDougall, "Social Psychology" (1914), 74.

Who does not realize that the domestic pets which lonely people keep carry the affect that normally belongs to lovers or children? Only one should insist on the essentially affective nature of such symbolisms. The old maid lavishes affection on her parrot, and we may call it the affective symbol of a child.[13] But the identification stops here; she does not rock it in a cradle or bottle-feed it, though she might rear a tombstone above its body.

The great problem of affective transference is: from what do the loaded mental processes derive their affect, and what is the relation between the original carriers of affect and the subsequent ones? We saw, for example, that some share of the erotic affect in later life is absorbed from infantile enjoyments of metabolic functions. The pursuits most enjoyed in later life are those which have best absorbed pleasurable affect from things enjoyed earlier in life. Things which the individual thus enjoys will have more of the individual's attention and energy than things which are indifferent. It is thus significant for the individual's adaptation to life, to what activities the pleasant affects attaching to childish sources of enjoyment are later transferred. If they are transferred to useful activities, the result will be beneficial to the individual and those around him. This is the process that Freud and his followers call *sublimation.* If the pleasurable affects are not sufficiently transferred, or are transferred to useless or harmful activities, the resulting failure of sublimation is summed up in such terms as introversion (p. 41), or more broadly, *regression.*[14]

[13] Or a lover; *cf.* the charming monologue of Beatrice Herford, "The Professional Boarder."

[14] *Cf.* Wells, "Mental Regression: Its Conception and Types," *Psychiat. Bul.* (Oct., 1916), 445–492.

A great part of human energy is spent to serve no purpose beyond immediate sensory or mental pleasure to the individual. It is like the lavish expenditure of money for unproductive luxuries, by way of "putting it into circulation." The political economist points out that the money is as truly put into circulation if spent in more useful ways. The similar policy of mental economy is thus wasteful, though not necessarily harmful.

Whatever directs the transfer of affect and interest from trend to trend of conduct is what makes the most striking difference between the superior and the inferior personality. It makes the difference between the lover of caged birds and the builder of a great social service. It is the process by which one workman spends his dinner hour in teaching his dog a new trick, while his comrade invents a new carpenter's tool whose patent he sells for a fortune. It determines whether a boy who chases fireflies will find his life work in attending to street lamps, or in engineering the illumination of great cities.

Viewed genetically, the affective life of man is a continual series of affective transferences. Certain things are normally of interest in childhood. Their affects are transferred to the other normal interests of adult life. When an abnormal, unusual sort of affective transference has taken place, it produces "affective displacement." Displaced affective reactions may also come about in other ways (affective contrast and underlying moods). The chief generalization to which this chapter directs us is the persistence of affectivity independently of the idea to which it attaches. *Objekt vergeht, Affekt besteht.*

This is the meaning of the "continuity of emotion"—the conservation of affectivity. As water siphons from

one vessel to another, so does the *Gefühlsflut* of affect and interest siphon from one pursuit to another — from the child's hunt for the golden butterfly to the man's quest for the golden fleece. Successful living is pretty much a function of the paths which this transference takes, and the effectiveness with which it is accomplished. And, as men differ greatly in these paths of transference, they differ again in the readiness with which affects transfer from any one pursuit to another. Some persons develop liking and interest for almost anything which circumstance puts in their way. Others have deeper and more stable interests which do not so readily transfer. The Don Juan and the "one girl man" are their erotic prototypes. The enjoyments of the former have superior adaptability, those of the latter superior persistence. Major differences of character and temperament hinge upon these factors. The contents of personal consciousness have never begun to account for them. This fact invites their classification as inherent and constitutional traits. But psychogenic influences may be outside the domain of personal consciousness. Ideas of much import to the individual, like the phobias of bell-towers and of insects, lay inaccessible to consciousness; yet they were not constitutional but psychogenic. The significance of acquired but unconscious influences in the development of personality is unquestionable. We seek their better acquaintance in the next chapter.

CHAPTER V

TYPES OF DISSOCIATION

As these lines are written, certain mental processes go on in the writer's mind, of which this writing is an expression. Meanwhile, other processes go on in him, which are independent of this writing. Breathing and heart-action continue uninterruptedly, and are but slightly affected. Like the writing, they are conditioned by nervous activity. Breathing depends upon a lower nervous center, and heart-rate is similarly regulated. Breathing and heart-rate on the one hand, the composition of these lines on the other, have not especially modified one another. Such independence, and lack of connection, when it occurs between mental processes, is called *dissociation.*[1] When processes thus go on with relative independence, they are said to be *dissociated* one from the other. One mental function is dissociated from another, to the extent that it goes on independently of the other. Of course this independence is never absolute; if the heart stopped so would the writing. The dissociation between mental processes is always a matter of degree.

As the writing proceeds, my secretary brings me some letters to sign. While the letters are being examined and signed, the work of composition ceases. It is im-

[1] *Cf.* Hart, "Psychology of Insanity," 42: "This division of the mind into independent fragments, which are not coördinated together to attain some common end, is termed 'Dissociation of Consciousness.'" This broad use of the term is the best one for us. *Cf. also* Hart's illustrations.

possible for me to attend at once to my writing and to the letters. My eyes, memories and arm-movements cannot serve both these purposes at once. The writing and the letters employ organic functions which are not independent. I cannot dissociate these functions to perform the different tasks at once. Such functions are rather *integrated* — the opposite of dissociated. In so far as the organic functions proceed independently of one another, they are dissociated. In so far as they modify one another, they are integrated.

It is easy to see that of the several bodily and mental functions, many are closely integrated. As a rule, there is a close relation between respiration-rate and heart-rate. If one should go up while the other went down, they would be dissociated. The understanding of a joke is integrated with the process of laughter. In the same sense, the knowledge that two and two make four is integrated with the balancing of one's bank account. My conduct of to-day is integrated with a conversation I had yesterday, if I keep a certain lunch appointment. If I forget the appointment, my mental processes are dissociated with those of yesterday, where they should have been integrated. In one who is by nature a good father and an honest politician, public and private morals are integrated. In a good father and corrupt politician they are dissociated.

It makes for the well-being of the organism that some functions should be closely integrated, and others more or less dissociated. That dissociation is certainly a good trait which enables one to do mental work while digesting his dinner, or to pick one's way over a rough mountain trail while carrying on a pleasant conversation with companions. Much dissociation comes by practice; in

the latter instance, the novice would have to pay attention to his footing. An essential part of all training is that it enables one to carry on simultaneously processes which at first take undivided attention. Some people may train themselves to unusual dissociations of their mental processes, like multiplying a group of figures and repeating verses at once, in about the same time as is required for either alone.[2]

With these examples for the meaning of integration and dissociation, let us briefly enumerate what is normally integrated in the personality, and what is dissociated. Most reflex, or so-called "infra-cerebral" processes, like breathing, heart-rate, and metabolic functions, we are not normally aware of, nor do we voluntarily control them. They are dissociated from awareness and from volition. Breathing and walking we can readily become aware of and voluntarily modify, but we *need* not. In digestion and other metabolic processes, the dissociation from awareness is practically complete.

But though many such functions are independent of awareness, there is a sense in which they are all integrated with it and with one another. Their tendency is to serve the personality. The digestion of food and the performance of ordinary work are dissociated so far as independence is concerned. Yet they are both beneficial to the organism in their several ways. Though digestion is not integrated with awareness, it is integrated with the tendency to survival. Now if this integration should break down, and the digestive organs should refuse to perform their work, there would be a dissociation which is harmful to the organism. Some dissociations are useful, others wasteful. A great number of

[2] James, "Principles," I, 408.

normal dissociations are developed through selection and training, for their value to the organism. Dissociations harmful to the organism are pathological. Pathological dissociations come about through special applications of the principles brought forward in Chapter II (pp. 44–45).

Every one who is to speak of dissociated mental functions must posit something from which the dissociation takes place. What is the dissociated function dissociated from? A simple kind of dissociation occurs in hysteria, where the patient does not feel a touch upon some particular portion of the body. That portion is said to be anesthetic. We call it so because "he," the patient, does not feel it. Sensation is present, because there is some involuntary reaction to the touch, but "he" does not feel it; it is dissociated from "him," not integrated with "him." The sum of all memories that this word "him" implies in this case, is the mental system from which dissociation, as we shall here discuss it, takes place. A convenient name for this system is, the *main personality*.[3] In the writings of Janet and Prince, one finds *personal consciousness*. The two are used interchangeably; either form is used that seems the clearer for the purpose in hand.

This chapter describes the dissociation of mental processes from the main personality, with some other phenomena not strictly of this class, but obviously related to it. These dissociations are of several kinds. We have quoted a possible example of the first kind, in a breakdown of the digestive system. Here a process is dissociated not only from the personal consciousness (as it is normally), but also from the main tendency to survival. We shall meet a few other examples. In such cases, the

[3] Introduced in this sense by August Hoch.

distinguishing feature is the dissociation of some involuntary or unconscious function of the organism. Second, the ability to move one side of the body, or the lower half of the body, or to make the movements of speaking, may be lost. It is like a paralysis of the muscles that make these movements. Certain movements of these muscles are lost to the control of the main personality. They are dissociated from it. Third, a patient whose retina is unaffected may be unable to see objects outside the direct line of vision. Though his skin is healthy, he may be unable to feel a touch at some special spot. When this happens, it is a form of sensation, instead of a movement, that is dissociated from the main personality. Fourth, *ideas* may manifest themselves in a great variety of ways, without the main personality's being aware of the ideas. Prince's patient of the bell-towers gave a fair example of this, when her hand wrote automatically something not in the awareness of the then dominating personality. Fifth, the main personality may lose control of the organism, which is then dominated by a system of ideas split off from it. (Somnambulisms, fugues, multiple personality.) Sixth, the main personality may be aware of the occurrence of a mental process, but not recognize the existence of the process as a part of the main personality. (Externalization, projection.) For example, a patient complains that the "voices" hurl insults at him. Of course, the voices come from nobody but himself; but he does not recognize the voices as coming from himself.

We may take up these different forms of dissociation in the order above. First come those in which an involuntary and only incidentally conscious movement is dissociated from the integrated organic trends, so that it no

longer serves the organism. Janet affords a group of illustrations. Perhaps the most delicate is the dissociation of the crystalline lens, which abolishes visual accommodation. The lens is functionally paralyzed, and cannot accommodate for varying distances. It remains adjusted for one distance only, and objects must be placed at that distance to be seen clearly.

Again the dissociation affects the respiratory movements. The integration of the diaphragm, glottis, etc., which is necessary for effective breathing, is disturbed. Considerable effort may be made to breathe, but, as it is not well coordinated, very little air is taken in. An interesting respiratory dissociation he quotes from Lermoyez, whose case could breathe only through the mouth, though the nose was not obstructed. If the mouth was kept closed, no breathing was possible for her, and she became blue in the face for want of air. The simple, necessary function of breathing was dissociated — wholly cut off from serving its elementary organic purposes. Janet is of the opinion that these dissociations of breathing do not descend to the lowest nerve-centers that control breathing. A patient, unable to breathe, may faint from asphyxia. Then, when consciousness is abolished, the centers of the medulla resume their function, and breathing recommences. Life, which consciousness has been powerless to maintain, is preserved by the unconscious.

Dissociations of the alimentary functions have been mentioned. In the above respect there is a fateful difference between respiratory and alimentary dissociations. The taking of food involves voluntary movements; so that the dissociation of the voluntary processes of eating, if sufficiently prolonged, may cause death from hunger. Janet thinks that sensory dissociations of smell, taste, and touch (mucous membrane of the stomach), play some rôle in dissociating the alimentary functions. If the appropriate stimuli of appetite are not felt, the proper reflexes are not aroused. On the other hand, the function of alimentation is so complex that it is difficult to know just what is dissociated in a general disturbance of it. Janet lays more stress on a general euphoria; a failure to perceive the sensations

of inanition. The patients have less sense of the need to eat. It is important to know whether digestion proceeds normally in the case of food administered through a stomach tube. If the involuntary processes of digestion are still integrated, there should then be no death from starvation. According to Janet, tube-feedings are digested practically normally. The dissociation of involuntary alimentary functions is therefore doubtful.

There is some other evidence that vaso-motor and trophic processes may be disconnected from previous integrations with the rest of the organism. Moll, without accepting them all, unreservedly, cites a long series of such observations,[4] in which the dissociation is produced by hypnotic suggestion. Bleeding from the nose and skin is said to have been thus produced. When a subject was touched with a common object and told the skin was being burned, a blister in the form of the object resulted. Control of the peristaltic functions seems relatively easy to effect. James recalls Delboeuf's observation that of two symmetrical burns with the actual cautery, no blister appeared on the side for which anesthesia was suggested.[5] Pfister reports the case of a young girl who twice developed a swelling of the lip after resisting attempts at kissing.[6]

The *voluntary* movement of limbs may be lost, so that they appear paralyzed. If one side of the body is thus dissociated from voluntary control, the result is a functional *hemiplegia.* If the dissociation affects the lower half of the body, the result is called a functional *paraplegia.* Various signs of physical disease are absent in such cases which would be present in organic paralyses, and thus they are distinguishable. Janet makes a striking point of the long duration of the paralyses, lasting for days and months, unlike other hysterical dissociations, which are more transient. Cognate with the paralyses are the muscular *contractures.* There is the same

[4] "Hypnotism" (1904), 123–138.
[5] "Principles," II, 612.
[6] *D. psa. Met.*, 35.

dissociative loss of control, but the limb is moderately contracted instead of paralyzed. In two of Janet's cases of this type, the symptoms lasted for thirty years; but the symptom is also liable to sudden disappearance.[7]

Sometimes the dissociation affects movements of the eyes; if the patient desires to look at something in the periphery, he must turn his head to bring it into the field of clear vision. On the other hand, if he is startled, the eyes promptly turn to the source of trouble. The voluntary function alone is lost; the deeper automatic one is retained.[8] It is like the medulla restoring breathing when the will cannot (p. 158).

The function of speech may be lost, simulating a true motor aphasia. Or only a certain part of it may be lost, like the function of the vocal cords. The patient then speaks only in a whisper. Or, more refinedly still, the speaking voice may be lost but the singing one kept.[9] Many of the common *lapsus linguae* are transitory dissociations of the speech function to which more detailed reference must here be dispensed with.

A general feature of these dissociations is that they affect circumscribed functions strongly and in particular ways; other closely related functions may not be affected. This is what is meant when one speaks of a *systematic* anesthesia, paralysis, or other dissociation. It is a systematic dissociation by which the patient can sing, but not speak aloud. Important systematic paralyses are the losses of manual dexterity in trades. Though there is no paralysis of the hands, the seamstress loses the ability to sew, the ironer to iron.[10] Such a dissociation is even more specialized than that of the crystalline lens from

[7] *Maj. Sympt.*, 134.
[8] *Maj. Sympt.*, 206.
[9] *Maj. Sympt.*, 217.
[10] *Maj. Sympt.*, 177.

the complex of eye-movements (p. 158). The best known dissociation of this type is that called *astasia-abasia,* in which the patient cannot walk, though other movements of the legs are preserved. Even some movements of locomotion, like jumping, dancing, running, may persist; only walking is lost. There is no question of failing power in the limbs; the difficulty is that the memories, the "neurograms" as Prince calls them, in which these functions are "conserved," have been cut off from their proper connections. The neurograms are still there and intact. Let the connection be restored and the process will discharge as before. Comparing the mind to a telephone switchboard, and the association of ideas to the several connections possible and established on such a switchboard, the entire group of dissociative losses may be figured as a disturbance of electrical connections. Loss from organic dissociation is to loss from functional dissociation as destruction of the power plant is to the disordered switchboard.

In the third main type of dissociations, the mental process is called "dissociated" from the main personality on the ground that the main personality is not aware of it. Among the organic activities of which the main personality is normally unaware, we have mentioned reflex, metabolic, and other involuntary processes. This group need not occupy us further. When we focus on the field of *ideas* and *perceptions* of which the main personality is unaware, we must sharpen our definition somewhat.

Our eyes are so constituted that they take up the vibrations of light-waves, and, preserving essential differences in them, transmit them so that they can properly be reacted to. The ears do the same for sound-waves, the organs of

touch for pressure. They are means for perceiving what goes on in the world about us, so that we can act rightly toward it. This adjustment of the reaction to the stimulus takes place mainly in the central nervous system. Now, just as we have, in the sensory end-organ, means of perceiving something of what goes on outside us, so we have means of perceiving some of the mental activity within us. When we perceive, in this way, something going on in our minds, we say we are *aware* of it. Awareness is the sensation of mental process, just as vision is the sensation of light, and audition the sensation of sound.

As visual and auditory sensations have their obvious uses for the organism, it is reasonable to look for uses of awareness. In Chapter II (p. 50), there was indicated what the nature of this usefulness might be. In order that I may modify my conduct in response to the telegram and go to Buffalo instead of Pittsburgh, I must, apparently, become aware of the telegram's contents. In the normal individual, this awareness is an essential condition of adjusting oneself to situations as complex as this. The eye will adjust itself to light, the feet to the ground, the breathing to one's exertions, without one's knowledge; but when one must change the plans of a railway journey, or review a book, or answer a letter, these things will not be accomplished without some awareness of the tasks involved. This is summed up in the technical formula: "Arcs of the third level are conscious." Where the proper adjustment does not occur without awareness, it is natural to suppose that awareness helps in some way to make it.

The best general criterion of awareness for us is a wholly empirical one. If the hysterical cannot tell that we touch him at a certain point, we have to suppose that he is not aware that we touch him. The criterion is that the person shall be able to formulate the mental process in terms of language intelligible to another.[11] If such a formulation is given, we must assume awareness. We may also assume awareness, in so far as it is probable that such a formulation could be given.

[11] When this is a process that is normally capable of being so formulated, as the normal person can tell when he is being touched. This reservation is suggested by some observations of Terman's. *Cf. also* p. 319.

The first group of these dissociations to be considered is the failure of awareness for sensations ordinarily conscious. Some such examples have been cited. The loss of sensation from various parts of the alimentary tract was alluded to in discussing the hysterical disturbances in taking food. Patients may not recognize that the food they take is too hot or too cold. Just as there is a loss of the hunger sense, there is a relative loss of the sense of suffocation. The patient with respiratory dissociations "indicates only very late the need to breathe." [12] Complete loss of the sense of sound is reported by Walton. Word deafness, in which words or musical airs are heard but not recognized, is also reported.[13] Thus the dissociation may affect the entire auditory function, or it may cover only the higher associative processes. Loss of smell may accompany respiratory difficulties.

The eye, which offers some delicate examples of motor dissociation, does equal service on the sensory side. The dissociation may be very deep, so that careful examination is needful to distinguish it from organic blindness. Here, too, like the startled person who moves his eye, the hysterically blind patient may avoid an obstacle unexpectedly put before him. But the dissociation from the awareness of the main personality seems to be complete.

The same preservation of the more automatic parts of the function is shown in the cases in which the dissociative blindness affects only one eye. Then if the other eye is closed, the patient is in darkness; but with both eyes open, he sees binocularly.[14] Dissociations of halves of the visual field also occur. Interesting are the anomalies of color-

[12] *Maj. Sympt.*, 250.

[13] *Cf.*, with general reference to the sensory dissociations, Oppenheim (tr. Bruce), "Textbook of Nervous Diseases" (1911), II, 1064–1070.
Curschmann (tr. Burr), "Textbook on Nervous Diseases" (1915), II, 852–858.

[14] *Maj. Sympt.*, 188.

vision. Apparently the colors at the blue end of the spectrum vanish most easily, and red is the most persistent.[15] This is different from the organic color-blindness, in which the red-green variety is the most common.

A more characteristic dissociation is the contraction of the visual field: the patient does not become aware of things not in the direct line of vision. Normally the field of vision has an angle of about 90°. Among the many dissociations of hysteria is one in which this angle is reduced to 30° or 20°, or so much that only a point is left. But, as in other cases mentioned, it is only with mental processes of a certain kind that this perception is abolished. Reactions more or less automatic may still be carried out normally. A patient whose visual field is in this way reduced to a point may be perfectly able to catch a ball.[16] Another such case would have a convulsion when he saw a small flame as from a lighted match. Although the angle of the visual field was about 5°, the convulsion would ensue if the match were moved into the 80th degree. This observation parallels the case with muscular anesthesia, who would fall down if the eyes were closed, but who would have a convulsion if the arms were placed in a particular position, although the eyes were closed.

The sleeping mother is systematically anesthetic to the noise of street cars, but hyperesthetic to the cry of her child. If we await a certain sound, many other supraliminal sounds may normally occur without our becoming aware of them. The systematic dissociation of various sensations from awareness, and the preservation of a certain other sensation in awareness, is what gives us "conscious" attention to the favored sensation.[17]

[15] *Maj. Sympt.*, 204.
[16] *Maj. Sympt.*, 198.
[17] Thus Parmelee: "By attention I mean simply that the nervous system responds to certain sensations, to the total or partial exclusion of other sensations which are being received at the same time. . . . Hence it is that attention is not necessarily an indication of the presence of consciousness. . . ." "Science of Human Behavior" (1913), 290–291.

Prince adduces the familiar process of hunting for an object that is lying immediately before one. One has a systematic anesthesia for it. It is the same process by which the hypnotized subject fails to perceive the marked card, which he must have first distinguished, in order to meet the suggestion not to perceive it.[18]

By similar dissociation, the victim of the railway accident does not perceive his own pain or the cries of his fellow-sufferers whose pain-sensations are more "integrated" with their main personalities. The wounded soldier does not perceive his hurt on the battlefield. Great emotional crises thus have a property of dissociating normally intense sensations from awareness. (Martyrdom.)

The sensory and motor functions whose dissociations have been described may be recounted as follows:

Dissociations from trends of organic survival. Involuntary or automatic functions.— Visual accommodation (crystalline lens). Respiratory coördinations. Automatic responses of digestive system (?). Bleeding from nose and skin (Hypn. sugg.). Formation of blister (Hypn. sugg.). Peristaltic functions (Hypn. sugg.). Swelling of lip.

Dissociations from awareness. (Preserved integration with trends of organic survival frequently demonstrable.) Voluntary functions.— Hemiplegia. Paraplegia. Contractures. Eye-movements. Motor speech. Speaking aloud. Speaking aloud lost but singing preserved. Loss of special abilities — sewing, ironing. Loss of walking but not of running or jumping.

Sensory functions.— (Hysterical dissoc.). Loss of organic sensations. Sound and word deafness. Blindness. Monocular blindness. Color blindness. Contraction of visual field. Muscular sense. (Normal dissoc.). Loss of irrelevant noises by sleeping mother. Loss of object immediately before one. Injuries of railway accident or battlefield. Anesthesias of martyrs.

[18] *Unc.*, 442.

"In reality," says Janet, "what has disappeared is not the elementary sensation, the preservation of which we have just seen; it is the faculty which enables the subject to realize this sensation, to connect it with his personality, to be able to say clearly, 'It is I who feel; it is I who hear. . . .' They are groups of sensations forming a kind of system, that is to say, the ensemble of sensations coming from the hand or leg, which can no longer be connected with the totality of consciousness, although they still exist on their own account, and even determine reflexes and usual movements. Let us apply the same notion to our paralyses; we shall see that the facts are absolutely of the same kind."

This concludes our survey of the dissociations of sensory and motor processes from the main personality. We see that there is almost no limit to the fineness of the analysis which the dissociative process can make. The next topic concerns the higher mental processes — *ideas* or *memories* which do not come to awareness. The criterion of awareness is necessarily the same as before: that the subject shall be able to describe the mental content. In order that an experience may be described, it must be recalled to the mentality that describes it. The whole question of dissociated thought-processes turns upon recollection. The problem is to demonstrate in the reactions of the organism the effectiveness of thought-processes which the main personality does not recall to awareness.

At any given time one is aware of only a small part of what one recalls at will, or may subsequently recall. This material is *conserved,* as Prince puts it, outside the field of awareness. But, where its recall to awareness is under voluntary control, and its effect upon conduct can-

not be demonstrated without its coming to awareness, it would be straining a point to regard it as dissociated material.

On the other hand, it is a constant experience, that we try to recall something that refuses to come into the personal consciousness. We give up trying, and later on it comes of itself. The writer has noted an especial effectiveness of recall (hypermnesia) just at waking in the morning; and has made use of it to recall names and snatches of song which had been unsuccessfully sought at other times. As will appear below, no limit can be set to the extent of the memories which hypermnesia may recall to awareness, or the perfection with which they are preserved until they are so recalled. These ideas are dissociated from the main personality in the sense that they cannot be voluntarily recalled. That they are conserved all the while, their later recurrence shows.

The simplest type of mental dissociation is a systematic amnesia. It is to ideas exactly what dissociative anesthesia is to sensation, or paralysis to movement. A transitory instance was shown by a lady who for years has known the writer well, but who, in the attempt to address him in company, cannot recall his name, searching it in embarrassment for several seconds. It may be impossible for the subject to recall the forgotten experience. Prince's bell-tower case could not recall to the personal consciousness the original episode of the bell-towers. It was dissociated, but effective for the main personality in giving rise to the phobia (p. 129). When certain special, often clearly important, events are forgotten, and have their conservation afterward demonstrated (as in the automatic writing of the bell-tower case), this kind of systematic amnesia is called *episodic* amnesia. The dis-

sociation may also be a loss of memory to the personal consciousness of what happened during special periods, as of days or weeks. Some cases are reported in which things are forgotten as fast as they happen, or in which the whole previous life is " forgotten." It has been, and still is, a fascinating experimental problem how deep the forgetting goes in such cases. In the Reynolds case of Weir Mitchell, although the previous experiences could not be brought to awareness, the patient relearned to speak, read and write in a few weeks. Thus there was clearly much conservation of well learned processes outside awareness. We have seen how the dissociative paralysis of eye-movements is abolished to look at an unexpected object; and how the dissociative blindness is abolished to avoid the unexpected object. These are tokens of perception outside of personal consciousness. But the dissociation of perception and voluntary movement is scarcely seen outside of abnormal personalities (hysteria especially), or unusual situations (the battlefield). The dissociation of ideas, on the other hand, is of more nearly equal import for the normal and for the pathological mind. It has been possible to demonstrate the persistence and effectiveness of vast groups of memories and associations, not inferior in complexity to those we are aware of, that never enter the personal consciousness. This demonstration may be regarded as among the foremost of psychological achievements.

Our interpretations of mental and other phenomena naturally take the simplest form that will cover what we know. Uranus is the outermost planet until irregularities in its orbit are noted. Then it is natural to infer a planet outside it, though we cannot see it, and it is not found until later. Everyone has his favorite analogies for the conceptual value of the " unconscious," which is to be taken as a

collective name for mental processes dissociated from awareness.[19] Prince makes use of many.

It is a great mistake to suppose that our mental processes are confined simply to those we are aware of. To do so is like thinking that, because we do not see objects clearly in the dark, they are but shadowy forms without substance. It is like interpreting the mechanism of a clock from its face, with no account of the works behind it. It is like thinking we have the fullness of a play without knowing what goes on behind the scenes. (Liebmann, quoted by Pfister.) To regard our conscious motives as the real reasons for our important acts is but a degree removed from the savage who thinks that the changes of the seasons are made by his magic. The unconscious is like the unfilterable virus; like the dark side of the moon; like the vitals of the ship which are invisible below the water line; like the radium emanations which cannot be experienced, but which are necessary for the interpretation of other phenomena.

The bringing up to awareness of material not subject to voluntary recall is the simplest demonstration of dissociated persistence of ideas. We have already alluded to this as a feature of normal life. In addition, there are special conditions which bring about a great increase in the memories thus recalled to awareness. Prince enumerates several such conditions, the simplest of which he calls *abstraction.* He means the concentration of attention upon a particular memory (and abstraction from all else). The subject then allows everything that associates itself to this memory to come into his mind, freely and uncritically. Under such conditions, memories come to awareness which are not to be voluntarily recalled to

[19] *Conscious,* then, becomes synonymous with *recallable to awareness at will.* Thus, at this moment, I am *aware* that I rode to Worcester yesterday in a steel coach; but I am also conscious of a great many other events of yesterday, because I can voluntarily bring them to awareness. This is the most useful distinction between consciousness and awareness for present purposes.

awareness. The property of recalling forgotten experiences is also asserted for dreams.

In the quantity of recovered memories, the greatest penetrations into the unconscious are probably made in hypnosis and allied states. The Hanna case of Sidis' may effectively be quoted in this connection.

> . . . The hypnoidisation brought forth phenomena of the utmost interest and value. Events, names of persons, of places, sentences, phrases, whole paragraphs of books totally lapsed from memory, . . . all that flashed lightning-like before the patient's mind. . . . On one occasion the patient was frightened by the flood of memories that rose suddenly . . . deluged his mind, and were expressed aloud, only to be forgotten the next moment. To the patient himself it appeared as if another being took possession of his tongue. . . . The probing . . . made it perfecly clear that his old and forgotten memories did not perish, that they were present to the secondary consciousness. . . . The patient acted out and lived through experiences long forgotten and buried.[20]

The first part of this passage suggests a curious similarity to the flood of ideas said to come into the mind of a drowning person. The interpretation would be the same, that the dissociated memories are again re-associated with the personal consciousness. Other cases are cited in which two subjects would repeat verbatim the contents of "fairly long letters," where there might be no recollection even of having written the letters.[21] There seems to be no readily assignable limit to the amount of memories conserved outside of awareness. It cannot be asserted that any event is forgotten past the possibility of recall.

Abstraction recalls lost memories and may reunite them

[20] "Psychology of Suggestion," 224–225. *Unc.*, 75.
[21] *Unc.*, 39. *Cf. also* James, "Principles," I, 681.

permanently to the main personality, so that they are voluntarily recalled thereafter. Hypnotic states also recall lost memories, as above, but, as a rule, unite them with the main personality only while the hypnosis continues. After it they are forgotten again. No sharp line should be drawn between this "abstraction" and mild hypnotic states. The more transient the reuniting of the lost memory with the main personality, the more of the hypnotic element there is in the state in which it occurs.

In such cases as these, the dissociation is established only by suspending it (reuniting the lost memory with the personal consciousness). So does one identify amber by dissolving it in alcohol. In some ways the more satisfactory demonstrations of the unconscious are those which do not bring the dissociated ideas to the awareness of the main personality at all. The chief evidence of this kind comes from automatic writing.

We have already come upon automatic writing because it was found to describe experiences forgotten by the main personality. The bell-tower case brought up its most significant, though buried, memories, under automatic writing. Another case (Prince's B. C. A.), was asked to describe the clothes of a man she had talked to for some twenty minutes. Nothing was brought out except that he wore dark clothes. Under automatic writing (of which the main personality is unaware) the subject gave the following description, correct in all details:[22]

He has on a dark greenish gray suit, a stripe in it — little rough stripe; black bow-cravat; shirt with three little stripes in it; black laced shoes; false teeth; one finger gone; three buttons on his coat.

Forgotten portions of dreams may also be recovered in this way.[23]

Automatic writing is thus another means for demonstrating dissociated ideas. But it has a greater interest

[22] *Unc.*, 53. [23] *Unc.*, 59.

for us in its own dissociated character. As in the case above, the content of the writing does not ordinarily enter the awareness of the main personality. The automatic writing represents a series of complex motor coördinations, back of which are a series of higher mental processes (memories and associations), all of which proceed outside the control or even the awareness of the main personality. A smaller personal system, with memories and perceptions of its own, is "split off" from the main personality, and operates a portion of the body (that concerned in writing) on its own account.

This control of a language-mechanism is a specially convenient feature of automatic writing. It can thus, by describing them, give a very specific and characteristic testimony to dissociated ideas, without their having to be brought to the personal consciousness. In the abstraction and hypnotic states, they had to be brought to the personal consciousness to be so described. But in automatic writing the anesthetic hand describes what stimuli are applied to it — a screen being interposed so that the subject does not see the hand — and the main personality is unaware of any stimulation applied to it.[24] This indicates again what becomes of the sensations which the main personality does not feel, owing to hysterical anesthesia. They are dissociated from the main personality, but go into the unconscious, and are preserved there. By *releasing the unconscious,* as is done in hypnotic states or automatic writing, the memory of these unfelt stimulations is manifested.

We have now seen, first, that different motor functions can be dissociated from the control of the main personality. We have seen, secondly, that sensations can be dis-

[24] *Unc.,* 57.

sociated from perception by the main personality. But both the lost sensations and movements are demonstrable on automatic levels, which lie out of the control of the main personality. We have just seen that memories may be dissociated from the control of the main personality, in that they cannot be recalled to its awareness at will. But the things which have been dissociated in these cases have still left the main personality recognizably intact. The main personality loses the faculty to move a leg, or to see with one eye, or to recall certain ideas, or to control the right hand, which, perhaps, is engaged in the automatic writing of these same ideas. The rest of the organism is still normally integrated with the main personality. These dissociations, in which the material may be more or less well organized, but is not sufficiently great or well organized to overshadow the main personality, are called simultaneous dissociations. Their manifestations are simultaneous with those of the main personality.

Automatic writing is the most complicated form in which simultaneous dissociation is commonly observed. It seems to be possible for more than the hand, perhaps half the body, to behave in a manner dissociated from the control, if not from the awareness, of the other half. But as a rule, if the dissociated material has a degree of organization like that shown in automatic writing, one of two things happens.

First, the split-off ideas and trends (dissociated from the main personality, but well integrated among themselves) displace the main personality from the control of the organism; and, for a longer or shorter time, manifest themselves through the organism. This is called somnambulism, and, in special cases, alternating or multiple

personality.[25] It is classed as successive dissociation, because the states dissociated from each other (main and other personalities), alternate in the control of the organism.

Second, the split-off ideas and trends manifest themselves in the awareness of the main personality; but the dissociation consists in the fact that, although they are within the awareness of the main personality, the main personality does not regard them as a part of itself. The main personality feels them as intrusions upon, perhaps opponents to, itself. These conditions are the pathological part of the sixth group of dissociations mentioned on page 157.

We shall first take up the group in which the dissociation is manifested in a suspension of the main personality from the control of the organism. The simplest of these is what Janet calls "fits of sleep." Their superficial appearance is that of normal sleep of varying depth. Such a condition may continue for days and months in spite of all efforts to awaken the sleeper. Bodily functions are much reduced.[26] It may be difficult to determine the breathing or heart-action. But the lighter forms show unmistakable evidences of mental activity. In response to questions, slight movements or even verbal answers may be obtained. The main personality, with its sum of memories and behavior-patterns, is displaced from the control of the organism, and in its place comes the dream-like state. The mental content in the fits of sleep seems

[25] The writer's colleague, Dr. E. Stanley Abbot, suggests very pertinently that since, by definition, independent personal systems do not each carry all the trends of the personality, but only a portion of them, it is more accurate to describe them as *partial* personalities, than as multiple ones.

[26] Of course this is not literally a "somnambulism," but it belongs among the processes conceived under that name.

to be fixed upon particular and narrow episodes. In a girl who has been frightened by a bull, a hallucinatory bull pervades the fits of sleep.[27]

Thus, fits of sleep are states in which the main personality loses control over the organism's behavior; however, the group of ideas which displaces the main personality does not get control of the behavior. The practical suspension of motor functions imparts to this dissociation a sleep-like character. If now the displacing group of ideas does have control over (becomes integrated with) these motor functions, the simplest result is what Janet calls the *monoideic* somnambulisms. In them, "This patient acts over again a scene wherein he has been bitten by a dog; that one reproduces in his dream the emotion he had when he was wounded by the falling lift. This little girl fancies a scene in her school life in which she was severely punished; that young girl reflects the scene of ravishment; a young boy repeats a quarrel in the street; another man lives through a chapter he has read in a novel, where thieves get through a latticed window and bind him tightly to his bed. . . . He knows not where he is; he has quite forgotten the changes that have taken place since the time he speaks of; he often does not know his own name. His memory, as well as his sensations, is shut up in a narrow circle." [28]

Like the fits of sleep, these are dissociations of a temporary character. They disappear, and behavior again becomes integrated with the main personality. The shifting of this integration from the main personality to the subordinate, "monoideic" system, may be very sudden, or more gradual, so that it can be watched.

Other cases are like the following: a girl simulates now

[27] *Maj. Sympt.*, 108. [28] *Maj. Sympt.*, 31, 35.

a fear of a lightning flash; now the reading of a painful letter; now an attempt at shooting. In such cases two or more monoideic somnambulisms of different content succeed upon one another. It is, apparently, to an aggregation of monoideic somnambulisms that Janet applies the name polyideic somnambulisms.[29] Such cases, in turn, grade into the so-called *fugues* and multiple personalities, to which we now come.

If a person's conduct is restricted, as above, to acting the rôle of a lioness, of living through the scenes of a mother's death, or repeating a street quarrel, such a somnambulism may control the organism, but will not support its life. It will not get food for the organism or do work. Sooner or later the organism must resume its functions or it will not be able to maintain itself. The *fugues* and multiple personalities are cases in which the dissociated system comes to include more and more ideas and memories, and to have more and more control over voluntary movement. In the fugues and multiple personalities, this has gone so far that the dissociated system forms a new personality, which may be quite equal to the "main personality" in the ability to maintain itself independently.

To illustrate the fugue: Janet's case of P, under the stress of worry about a family quarrel, suddenly feels as though struck on the back of the head. Eight days later he finds himself lying abjectly in the snow, half dead, in a distant city. In the awareness of the main personality, there is no memory for what has happened in the eight days. This is, however, recovered by special means. Among his actions are that he returns home, takes money, walks some distance, takes two railway journeys, lodges at a hotel in a distant city, tries unsuccessfully to get employ-

[29] *Cf., however, Maj. Sympt.*, 64–65.

ment, as his money gives out lodges more cheaply; is destitute when the main personality is restored.

There is now need for a further sharpening of our definitions. In the beginning, we made independence the essential criterion of dissociation. If P's actions in the fugue were *independent* of the main personality, we should then call them the manifestations of a dissociated state. This does very well so long as the dissociated material is simply a loss from the main personality, of some particular sensation or movement; or shows independent action by some particular member, like the hand in automatic writing. We can easily see its independence of the main personality, because the main personality is all the while present alongside of it, though unaware of it. Now we have to decide whether the entire organism (instead of some few parts of it), is in the control of the main personality, or in the control of a dissociated state. In the above case, the fugue-state certainly does things which would be abnormal for the man's main personality. The man was happy in his family life, and his wife was at the time pregnant. Should we, on the ground of abnormality in these actions for the main personality, consider that they are independent of the main personality, and thus dissociated from it? Logically it is defensible to do this, but practical considerations are against it. Take the fugue of the boy Rou,[80] who runs away from home to go to sea. On the way he hires himself to an itinerant china-mender, and manages to subsist. It would be unwise to conclude the existence of a dissociated personality in a boy from the simple act of running away. Suppose the boy were ill-used at home; it would be a fair question whether running away were not in accord with his main personality. The real evidence of dissociation in this case is, first, that during the fugue he thinks no more about his home: "forgets" it. The state is dissociated in that the thought of home, normally a daily and important one, now no longer comes to awareness. Again, as soon as the thought of home does come to awareness, away goes the memory of the fugue, and he cannot recall to awareness anything of how he came to be with the china-mender. This *amnesia* justifies the assumption of dissociation. One is much more certain of what the

[80] *Maj. Sympt.*, 51–53.

main personality can recall to awareness, than of what is in accord with the main personality. The ideas we now deal with are memories which the main personality can normally recall to awareness. The absence of their voluntary recall to awareness is for us the preferable basis for considering a system of the higher mental processes as dissociated from the main personality.

Accordingly, in the recognition of fugues and multiple personalities, the organism is controlled by a state dissociated from the main personality, either (1) when the main personality has no memory for events to be voluntarily recalled in that state; or (2) when that state has no memory for events well within the voluntary recall of the main personality. In the above fugues, the main personality has, on its return, no memory for the events of the fugue. Also, during the fugue, there was no thought (or memory) of the family at home. On both counts, therefore, the fugues come within the definition of the dissociated state.

Fugues and multiple personalities offer the principal demonstrations of persistence in ideas not recallable to awareness. Very important recollections, like those of the home, are for the time being lost to awareness. In the fugues, this loss is practically what makes the dissociated state. In the above fugues, the personality in control of the organism acts as the main personality would be expected to act, if it had lost the memories which have actually disappeared. The dissociated state is, practically speaking, the main personality minus certain important memories. These memories are relegated out of awareness into the unconscious. When they come up out of the unconscious, down go the memories of the fugue into the unconscious, just as one end of a scale-beam goes down when the other comes up. In the unconscious, the

memories of the fugue are evidently preserved, because they can be elicited by the special methods (like hypnosis) that will explore such unconscious memories. All these points are illustrated in the fugues cited.

A dissociated state controlling the voluntary behavior of the organism (as the fugue does) comes under the conception of an alternating personality by showing the following characteristics: (1) By maintaining itself for a long period. (2) By recurring for more than one period. (3) By showing good capacity for taking care of itself and the body it inhabits. (4) By showing distinctive temperamental features.

Multiple personality must be conceived as a shifting of the control of the organism from one personal consciousness to another, which is, perhaps, an equally well or better organized personality. Each of these personalities is from time to time integrated with (in control of) the voluntary activities of the organism. Among these mutually dissociated personalities, it is often unjust to single out any one as the "main" personality. At this point, therefore, the concept of the main personality, which has served us well thus far, ceases temporarily to be so useful.

The Ansel Bourne case[31] is a good example of fairly long continuance of the dissociated personality, with good ability of the dissociated personality to take care of itself. Ansel Bourne, carpenter, later itinerant preacher, draws money from a bank in Rhode Island, and boards a street car. A dissociated personality supervenes, and continues for some two months, when the Bourne personality is suddenly restored, with the characteristic amnesia for the intervening period. The dissociated personality, calling

[31] James, "Principles," I, 391–392.

itself A. J. Brown, has clearly retained many memories acquired during the Bourne state. Brown can still use language, and travel about in such a way as not to attract attention. The similarity of the names attaching to the two states is noteworthy. Brown also appears, in speaking, to have alluded to an incident occurring during the Bourne state. It is difficult to define how much of Bourne, Brown has lost. Those things appear the most completely lost which have the most personal connection with Bourne, like his name and occupations. But, as though to compensate for what is lost, we find Brown showing trends and capacities that Bourne apparently did not have. Brown finds his way to a Pennsylvania town, opens a candy shop, and for six weeks conducts the business in a normal manner. Now a "shrunken, amnesic extract of Mr. Bourne" would hardly set up a new business, and maintain normal relationship to it for six weeks' time; when Mr. Bourne, on his return to control, asserts that he knows nothing about such business. Actually Bourne is stated not to have previously had the "slightest contact with trade." Thus the dissociation not only plunges the personal memories of Bourne into the unconscious, but it brings up out of the unconscious certain abilities which enable Brown to maintain a candy business.

It was elsewhere noted that dissociated states can bring up large memories that are lost to the main personality. Particularly significant at this point is the case cited by Janet, of a woman who years since has forgotten the writing learned at school, but in whom this memory is recovered so that she can write during somnambulism.[32] The alternating personalities are of interest from this

[32] *Maj. Sympt.*, 34.

standpoint especially; that is, the addition of something to the personal consciousness, previously buried in the unconscious. Such is the most probable interpretation for the shop-keeping in the Bourne case, and the restored writing in the somnambulism cited by Janet. The main facts of the situation are given in the invaluable table of twenty cases collated by Prince.[33]

We know already that a main personality may for a time lose certain important memories, whose restoration attests their persistence in the unconscious. This is shown in the fugues quoted, and in the Bourne case. There is a somewhat different type of case, in which an apparently somnambulic state is quite *superior* to the state upon which it ensues. To these Janet gives the name of *dominating* somnambulisms. They are represented in the cases of Felida X, Marceline, Blanche Wittemann, Charles W. In the first three of these cases, there is a gradual reduction of the personality, with hysterical features (to be called II below). Thereupon, develops suddenly a personality with mental characteristics much superior to the previous state. and without the hysterical features (to be called I). When the previous state (II) recurs, it has no memory for the superior personality, i.e., for I. I remembers all of II, and is temperamentally superior to II. II remembers nothing of I, and is temperamentally inferior. From Janet's comment on Felida and Marceline (*Maj. Sympt.*, 89–91) it would seem that the gradual reduction of the personality shown in II was a gradual dissociation of characteristics which the personality originally had. The superior, dominating state, represents the restoration to the personality of these dissociated tendencies. That is, I adds nothing to the personality which had never before been a part of the personality; but I brings back many things which had been lost before the change of I into II.

The features of the fourth case above, Charles W., are in accord with this view. In this case, II appears suddenly after a railroad accident, and shows many psychopathic features. This state appears to have had no memory for childhood. It lasted for 17 years, during which the

[33] *Journ. Abn. Psychol.*, I (1906–1907), facing p. 186.

occupations of farming, operating a sawmill, and painting were followed. Then the state corresponding to I above ensues suddenly, following shock. This appears to be the original personality, for it has the early memories up to the development of II, and is without the psychopathic traits. It differs from the others in that there was no memory for the seventeen years of II, including the trade learned as II. Thus in these dissociations, memories and characteristics are added to the personality, which were not in the personality at the time of the change; like the shopkeeping of Brown. We need hardly suppose, however, that these features had never been part of the main personality. The case of Charles W. rather indicates that I is simply a restoration of what had been in the main personality (if not always, at least at some time) before the reductions of II began to take place. In this case, however, the personality of I soon broke down again, and the individual was lost sight of.[34]

It appears too, that these changes of personality have to be described in other terms than those of amnesia for things recallable to the awareness of the other personality. There are temperamental differences which are not accounted for by the differences in what each personality can recall to awareness. Thus, in Felida,[35] both I and II have the memory of the early normal life. Yet, on the basis of these memories attributed to each at the start, II is "sad, morose, spiteful, taciturn, making violent scenes," while I is "gay, happy, attending to duties like a normal person." (Prince.) Here the dissociations and integrations seem to have affected other functions besides memories to be recalled to awareness.

There is another — and very much larger — group of changes of personality, which it now becomes instructive to compare with the cases just under consideration. This

[34] Mayer, *Journ. Amer. Med. Assoc.* (Dec. 14, 1901), 1601–1605.
[35] *Cf.* Azam, "Hypnotisme, double conscience, etc.," Paris (1887), 63–69.

is the so-called manic-depressive psychosis. A form of it once had the name of "circular insanity," from the regular alternations of personality it produced. The comparison between it and the dissociated personalities, for the features of concern to us, is tabulated below. For convenience, the corresponding characteristics of dementia praecox, another important psychosis, are appended, as we are about to take up the dissociative characters of this condition also.

For the moment we have to do only with the dissociated personalities and the manic-depressive states. The chief distinction between the two is that, in the dissociated personalities, the character of the different states is very much more dependent on differences in the *memories* which come to awareness in the different states. In the manic-depressive conditions, the altered states are more dependent on changes in *mood,* which is notoriously independent of the memories recallable to awareness. May it not be that Felida, who in many ways combines the features of dissociated personality and manic-depressive psychosis, manifests a connecting link between the two? In the first, inferior state of Felida, she shows a reduced and depressed personality because there are, dissociated from the personality, certain elements which make for its happiness and general efficiency. In the second state she is more happy and efficient, because these elements are again integrated with the personality. But, in neither the superior nor the inferior state, is there any awareness of these elements. In both states they are unconscious, while at the same time having a profound effect upon the mood. The lesson that Felida and the other cases which parallel her in this respect carry is, that dissociative (and redintegrating) processes can induce changes of mood

without corresponding changes in the content of awareness. The process inducing changes of mood operates

	Dissociated Personality	Manic-depressive Psychosis	Dementia Praecox
Onset of attack	More frequently sudden, even momentary, but may be gradual.	Regularly gradual, through weeks or months, rarely sudden.	Regularly insidious, covering months or years.
Memory	Amnesias the dominant feature; each state may have memory for itself alone (reciprocal amnesia), or one state may have memory for others which have no memory for it. All this in the presence of mental clearness during the individual states.	No disturbance of memory for periods in which the patient is mentally clear. If there appear incidents of confusion or delirium, memory for these is poor. Except for these episodes, memory is as continuous as with the normal person.	Memory continuous. If there appear incidents of confusion or delirium, memory for these is apt to be good. Apparent poorness of memory often due to failure to coöperate in examination, or failure to register impressions, from lack of interest in external surroundings.
Mood	Changes somewhat between states, and along more various lines, not within such wide limits as in manic-depressive psychosis.	Change of mood the dominant feature. Varies along definite lines, from extreme euphoria to extreme melancholy.	Growing apathy toward ordinary interests of life. Sometimes, also, extreme affective reactions to trivial circumstances. ("Ataxia of emotion.") Supposedly phenomena of transference and affective symbolism.
Hallucinations	Denied by Janet for the fugue. Not a prominent feature.	Reported with some frequency, but seem more dependent on misinterpretation of actual sensations, i. e., resembling illusions. Little systematized.	Hallucinations the dominant feature. "The Voices." Of continuous occurrence, often showing high organization in their mental content.

altogether in the unconscious. We may say therefore, that dissociations of personality and manic-depressive states are founded upon two distinct types of dissoci-

ation.[36] In dissociations of personality, as typified by the Ansel Bourne case, what was recallable to awareness is thrust out of recallability to awareness and later brought back into it again. It is an interchange between the memories accessible to awareness, and the memories not so accessible (which latter go to make up the unconscious). The manic-depressive psychoses are not, in this sense, dissociations of *personality*. The changes of mood which distinguish them are induced by another type of dissociation, which breaks up existing associations and forms new associations, among the mental processes (trends) of which we are not aware, i.e., those of the unconscious. These changes in the unconscious are what effect the changes in mood. Prince recounts the experimental production of such a change. Thus, a happy attitude toward the weather, suggested under hypnosis, persists after the hypnosis, when the fact of suggestion is no longer recallable to awareness. The unconscious ideas manifest themselves in consciousness by a characteristic change in the mood.[37] Felida shows the type of dissociation between conscious and unconscious in that II loses the memories of I; she shows the type of dissociation among unconscious trends in that II gains, without corresponding access of awareness, a mood which the other personality lacked.[38]

We have thus far examined: (1) Dissociations of infra-cerebral processes (mostly normal). (2, 3) Dissoci-

[36] With reference to these points, *Cf.* August Hoch, "A Study of the Benign Psychoses," *Johns Hopkins Hosp. Bul.*, 26 (1915), 165–169.

[37] *Unc.*, 67.

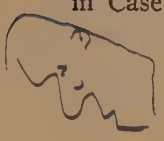
[38] It might be reasoned, of course, that I was induced by the dissociation of certain inhibitions from II, instead of by a redintegration of activity to I. Either view accords with interpreting the mood change as a dissociation wholly in the unconscious. The view of the text is the simpler and more natural one.

ations (mostly pathological), like the hysterical anesthesias and paralyses, of peripheral bodily processes which are regularly conscious. (4) Dissociations from awareness of central processes (ideas, memories) and their special expressions like automatic writing. (4) Dissociations of ideas that suspend the main personality from the control of the organism, and use the organism to live out their own trends (somnambulisms). Also highly organized dissociated systems which maintain the organism indefinitely in a dissociated character (multiple personalities). (5a) Dissociations and integrations not directly affecting the content of awareness, but operating especially in the unconscious (inducing mood changes as in manic-depressive conditions).

We reach the sixth of the groups of page 157; namely, those in which the dissociation is expressed in the foreign attitude of the main personality toward a special portion of the ideas of which it is aware.

Every thought in the awareness of a normal person is accepted by that person as one of "his" own thoughts. Thus the thought is integrated with the main personality. In the instances thus far cited, nothing has been dissociated from the main personality except by existing outside of it in the unconscious. In the cases now to be considered, thoughts occur of which the subject is aware and which he can minutely describe, yet without normal integration with the main personality. The main personality regards such thoughts as foreign to itself. The precise attitude it takes toward these intrusive thoughts varies in different cases, as the illustrations show.

A very slight dissociation from the main personality, difficult to formulate in general terms, is concretely shown in Case F. Of the ideas mentioned on page 64, he says



that they come through his mind talking to him. This is the initial step in such dissociation: the separating of his *mind* and *him*. *He*, the main personality, listens, while his mind suggests things to him. This mind-talk does not have tone-quality, comes merely as thoughts. He gave the Japan-Hawaii material (p. 64) as an example of the mind-talk. In the garden he picks up stones which are inspired; they are dropped by ravens as a reward for working out the "No. 3 system" which his mind evolved. In speaking of other ideas, "It seemed as if my spirit or soul or something had separated or segregated."

Case L speaks of some abnormal actions, like sudden falling down, as being produced by "dictates." These dictates, again, are foreign to the main personality, but still included within the patient's psychic organism. He says he did not know why he would fall down; he simply had to; that he received "sort of dictates" which he had to follow, though denying that anyone put thoughts into his mind or made him do things. "I did not faint, but sort of swooned. . . . I was not unconscious"; and, very descriptively, "I could have spoken if I had wanted to, but my dictates would not let me." He "received dictates to fall; something in my own mind tells me to fall. I don't hurt myself because I know it is coming. A persistent dictate kept at me until I fell. I couldn't get up at once because the dictate wouldn't let me. I know it was ridiculous but I was compelled to do it. The same thing comes over me in all these spells."

In ordinary speech, we talk of "thoughts coming into" our minds, in language not very different from that cited. The difference is, that we correct our thoughts if they are foolish, like F's; or do not respond to their orders, as L does. In F and L the main personality has not this control; hence their ideas are said to be dissociated.

Case A describes the incidence of the dissociated ideas as a "grilling" of her mind, but of a pleasurable character. No special incident that occasioned its beginning was recalled. "It just popped into my head the same as other things do. . . . It was very pleasant. In the morn-

ing, all through my morning work, it was just company for me. It was all my imagination, I can say that, but it was very pleasant. (Was it ever annoying?) Sometimes, if I would wake in the night." However in general, "It was helpful. . . . It would remind me of things, or it would say things to me; perhaps it was semiconsciousness. But if I was going out, it would say, 'Now, Mrs. A., have you got the key in your pocket-book?' Or, 'Do what will please Mr. A,' or 'Try to please X.' It was a voice, an imaginary voice. I know I encouraged it and let it grow on me."

Although in these remarks the patient does not refer the grilling to any source outside herself, she elsewhere refers it to the influence of certain men whom she names. A patient will now refer such ideas to another person, now recognize them as proceeding from his own organism, though not as part of the main personality. There is no break between the dissociations which are "projected" outside the individual and those which are not. There is entire continuity between the various interpretations.

The following Case D presents these features with more introspective detail, and with some tendency to externalize the ideas, i.e., refer them to other persons. There are also the beginnings of unpleasant content in the dissociated trends. It should be remarked that the diagnosis in this case is Graves' Disease, which is an intoxication from the thyroid gland. There is a definite physiological poisoning related to the dissociation.

Upon convalescence from an acute attack the patient tells, retrospectively, how she heard voices of her friends talking to her; she saw, and talked with them. At one time hearing the voice of a man who was dead, she thought it must be his spirit talking. She held a long conversation with her mother, her uncle and her aunt who are dead; they advised her what to do. Finally, when the nurse told her these were hallucinations, she was able to believe it;

and after that, although the voices continued audible for a while, later they lost their audible quality, and occurred merely as thoughts coming into her mind. (A lessening of the dissociation, approaching more nearly the previous observations of Cases F and L.) "I still have a lot of stray thoughts in my head—a lot of words that I can't express. I often talk to myself and say things I don't mean. They are inaudible, just loose words floating in my head. . . . They don't represent me at all, they don't represent what I think, but they don't now take the place of anyone else talking. . . . I know they are my thoughts in my own head."

At the onset of another and ultimately severer attack, this case began to be similarly troubled with auditory hallucinations, into which she preserved some insight. She knows they are voices in her head, not people talking (though they have sound qualities); and there seems to be a constant soliloquy going on in her head. At times it is as if she is the third person sitting back and listening to the conversation between two other people. Sometimes the voices were entertaining, like a continuous performance without any volition on her part. But often the contents are all about "disgusting sexual subjects"; accompanied by visual hallucinations of sexual organs. She reiterates, "They are not voices really; I am just carrying on a conversation with myself." [39]

The dissociated ideas are more often referred to sources external to the patient. Their content may be indifferent, or even pleasant, to the main personality, but is more commonly repulsive.

At a concert which Case L attended about the beginning of his illness, he saw a girl toward whom he had a secret attachment. As he sat, people made remarks in a nice way about him; they could read his mind and knew he loved the girl and had loved her for two years; seemed to know it was a sort of lovesickness he had. One remark was, "A pair of beautiful flowers"; another, "L is very good

[39] Just as in a dream, when one holds conversations with other persons, it is really dissociated systems of the dreamer's own mind that are conversing.

and well guarded." So far as the perceptions in this episode are concerned, they may well be illusions. Something was said, which the patient misunderstandingly referred to himself. He externalizes, or "projects" (p. 188), his own erotic ideas to people outside him. He hears them say things which accord with those ideas. When a patient falsely and foolishly refers experiences to himself, he is said to have "ideas of reference." Ideas of reference are especially marked in dementia praecox, as compared with other forms of mental disease. They are allied to the actual hallucinations, in that they "project" a trend of the patient's own mind.

Case M represents the process in a more definitely hallucinatory form. She too, however, begins by saying that during the last three or four years she has been "peculiarly sensitive to sounds." They seemed to be the voices of people, of men or women that she used to know years ago. Sometimes they said pleasant things so that she would laugh; at other times they seemed to say what she was thinking or doing. Sometimes they seemed to crowd one another so closely that one "could almost feel them." If she is making the bed, they talk about the bed linen and all the marks on it. If she is washing dishes, they will tell all the marks on the silver, etc. It is very annoying and she has tried all sorts of things to get rid of them. She does not like to go to theatres because the voices said things to her so loud that she thought they might go from her mind to other people's minds. Sometimes she thinks she will do a thing and then does something else so that they will not always know what she is going to do.

The dissociated ideas may be attributed, not to other human beings, but to supernatural sources. Case N furnishes a typical example of this. When the Divine Mind first commenced to speak to him, he did not actually hear the voices, but the thoughts were merely put into his mind. The ideas are suggested to him. The Divine Mind told him he was to be head of a great corporation; also the sun, moon and stars sent him messages confirming what the Divine Mind had told him.

Asked if he did not feel like eating, he said, not in the way the Divine Mind told him to. The Divine Mind told him to Fletcherize; while he, himself, felt like "pitching in and eating a good square meal." He was directed to take no tea and coffee, and to take milk instead; and the Divine Mind had duck-eggs sent to the table instead of hens' eggs. He mentioned having met a distinguished, and at that time deceased, capitalist at a previous institution; and when asked how long he had been there he paused and said: "I do not care to say. The Divine Mind said I did wrong to mention it at all."

This case (N), and also Case L, illustrate that ideas may be externalized without being *repudiated* by the main personality. Such voices are "friendly," often from supernatural sources, and inform the main personality of items which it accepts; while others are "hostile," and inform the main personality of items which it repudiates. Case J below is told by the voice of Christ that J was formerly Pericles; and he believes it. (Friendly, accepted "voice.") On the other hand, vile words are put into his mind from other sources. (Hostile "voices," repudiated.) The mind-talk of Case F was also at one time referred by him to divine inspiration.[40]

Voices with a content of varying affect are present in Case B. They were observed for some eighteen months, during which they became rather more prominent. When first asked to describe them, she said the one which talked the most was a former physician. The voices said all kinds of things; many of them were very disagreeable. Sometimes they were funny, and she would laugh at them. She gave only indifferent examples, as *Thank you* and *Merry*

[40] Significant in this connection is Mill's definition of *mysticism* as "neither more nor less than the ascribing of objective existence to the subjective creations of the mind, and believing that by watching and contemplating these ideas of its own making it can read what takes place in the world without." It is most aptly that Dr. Moses adds his own conception of mysticism as an "attempt to put asunder what God hath joined together." *Path. A. Rel.*, 69, 129.

Christmas. Later the troublesome element became more prominent; she heard her intimate friends say bad things to her, things that she could not bear. When these same people came to visit her, they did not talk at all in this way; she could not understand this. Later she remarked that the voices said funnier things than they used to, that they told her jokes, and she could not help laughing at them. As previously, however, they continue to call her a "bad woman." She is noted to start with terror at some frightful things she hears, again cries at some slandering thing, and again bursts forth in laughter at something funny.

Here the dissociated ideas are unquestioningly referred to other persons, who are identified; and the disagreeable element in them is more prominent than in the previous cases.

The following Case C has been under observation for some fifteen years. She presents a wealth of the phenomena under discussion, with special introspective detail. The dissociated ideas are indifferent, comic or repulsive. She shows also the continuity between "thoughts" and "voices," as well as between the different grades of externalizing or "projecting" them, i.e., attributing them to outside sources. In this last respect, the first beginnings of the dissociation are traceable two or three years before hospital care. At that time, instead of showing a normal sociability, she would sit alone in her room, apparently daydreaming, and in explanation said something about her bad thoughts. Even when the psychosis is clearly established, she continues to recognize the ideas as belonging to herself, saying:

"I get into different trains of thought and carry them right along. You want to say something and something else comes right in." That is, she feels some of her thinking to be dissociated from voluntary control. As she puts

it, more clearly than another person should attempt to do: "I can't seem to get my mind together. There — I can't — seem to — to — control my imagination, it is imagining a lot of peculiar things. . . . The things I like to do I can't possibly do, but I think of these vague things I can't possibly do." But the beginnings of projection are also present in the following: "Why I should think of these things I don't know. Something seems to push my mind into a channel I don't want it to be in. . . . I seem to be bound to find out a lot of things I am not interested in as if some one was teasing me." No *definite* externalization here, "something" causes it; "as if" someone did so. But the projection is nevertheless establishing itself. "I think some one has taken the liberty of transmitting thoughts into my mind that I know nothing about." Seven months later the projection is clear. "They put a lot of stuff into my head that I don't want there at all."

Two months later still, nurses and those about her figure as the authors of the ideas, and subsequently a man, who is, however, an indefinite figure. She describes how her personal consciousness is interfered with in its trains of thought. She has much difficulty in starting anything. Even when she got started she could not tell what to say; some queer notion would crop out that she had not intended to speak about. Thus she was prevented from performing a calculation test: "Don't you see, it won't start at all." Other expressions are:

"I can't remember things. When I try to, so many interruptions come in that my mind seems to be all broken up." "My mind doesn't always make connections. . . . Something makes a blank in my mind and I can't connect anything." "Don't you see, when a lot of ideas come to you that you don't want to know anything about, it is not very pleasant." Before admission to the hospital, she had expressed the feeling that her "brain wouldn't work." Early in the psychosis, she expressed this feeling of interference with her normal thought in some very instructive analogies: "My mind seems to be in layers like strata in geology."

"It's like going through a river, where there are a lot of weeds and they get in your way and you can't get through." "Sometimes I seem all of a sudden to sink right down into deep thought as though I were covered up in a snow-bank."[41]

"It is like the difference between a good and a bad person. If I could gather up a good will it would be all right. Instead these vague ideas seem to be wandering around as if they were going through a sort of labyrinth."

As to the form in which these dissociated ideas were presented to her, she says that there are many "voices," sometimes audible, sometimes only thoughts. There is certainly no sharp distinction. As to what the ideas were about, one does not obtain so clear an account as her excellent formal descriptions of them would promise. Early in the psychosis, she expressed a difficulty in retaining them: "O, it's gone from me if I don't tell it at once." Such amnesia is not characteristic of dementia praecox, however.

Among the special topics she described were:

"All at once I seemed to wish somebody would die. I didn't mean it, you know. . . ." "You stop putting that inclination to pull my hair out into my mind." (To a nurse) "Stop tempting me to break things!" "A cruel mind goes through my head." "The story of Faust came to me and I could not get it out of my mind." The last two of these are externalized; the first three are referred to herself, but independently of her voluntary control. When the ideas are comic, they are not clearly externalized: "I get some awfully funny ones, I seem to be quoting somebody. . . ." (Laughing without obvious cause) "Well, that's the funniest thing I ever heard of in my life. What a joke!" Sev-

[41] Some of these expressions of "mental standstill," as August Hoch called them, suggest the "Third Night" state of St. John of the Cross, where "memory and will perish. The soul floats corpse-like on the waters of Lethe. The sense of time and space is lost; the feelings, the intellect and the emotions are dead; the personality has completely evaporated; in brief the patient (*sic*) is a perfect blank." *Path. A. Rel.*, 97–98.

eral allusions are made to repulsive ideas. These are uniformly externalized. She becomes irritable at times, says she cannot stand it any longer, if they persist in putting such bad thoughts into her mind: "Vile is no name for them." (What about?) "You know quite well." "They are taking away my innocent mind — they are putting vile thoughts into my mind." (Wheeling on the nurse) "How dare you say I am not decent?" (Nurse had not spoken.) "What do you mean, all you devils, causing me to stay awake? I shall be crazy soon, listening to all these vile things you are putting into my head." Again speaks of their destroying her young, innocent mind. She thinks people say nasty things to her, swear at her and put bugs on her. Recently, there is a record of a similar visual hallucination, of "disagreeable figures rushing through the air."

Case J is characterized by dissociated ideas of extremely repulsive content, which he externalizes, and toward which he reacts with strong emotions of disgust. It is said that a few days previous to his hospital admission he began to imagine that people were talking about him, that they made bad remarks and made him think bad things. When brought for examination his look was angry, and his whole demeanor threatening. Yet when he was civilly addressed by the physician, a comparatively gentlemanly reaction came from beneath this exterior. At times he even smiled pleasantly, speaking with a very natural and deferential manner. Apparently it was not toward the examiners that his angry feelings were directed, but rather toward the repulsive ideas coming involuntarily into his mind.

Thus during the interview he would suddenly look very angry again. With a fierce scowl he would turn his head aside and utter a curse. Asked the reason, he said it was because they were driving thoughts into his brain. Asked what kind of thoughts, he said they were words like (*sugere, futuere*), and similar disgusting things. Frequently he took his handkerchief, held it some inches from his mouth, and

spat into it. He said that when they drove those things into his brain it made him so disgusted that he had to spit. Once, when he missed his handkerchief, he promptly apologized and wiped up the sputum, showing again that his opposition was not directed toward the examiners. At another time when he swore, he told the examiner that it was not meant for him, but for the thoughts. In one remark he seemed to vaguely realize the dissociated condition of his ideas. He mentioned that in right-handed people the left side of the brain has to do with certain activities; but if it gets out of order, the other side of the brain may be educated to perform those activities. The left side of his brain he said had gone to pieces, and the right side was now beginning to take up the functions of the left. But the left side still "worked some"; with the result that the two halves of his brain were working against each other and getting everything "all balled up."

Case F has already offered from the early stages of his psychosis, examples of a slight dissociation (the "mind-talk"), not yet externalized. Later, he brings out other ideas than those described (pp. 63ff), and these he externalizes. He has also a much more complicated notion of the way in which the ideas are given him, than the previous cases show. He is apparently a sort of medium, which any other mind (the "spirits") may enter, and express itself through him. In his own words:

The spirit world is pretty active. . . . My life is apparently in the hands of others the way I am situated now, and I do not see how I am to help myself any way. I feel as if I were supporting this column of spirit realm, as you might say, and I was wondering if hundreds of other spirits came into it, if I could stand the tension. Anyone's which comes into my life (may enter); they can make up strange faces and cover their identity in that way. Anyone may come into the spiritual world under certain conditions. Any spirit that enters this realm can gauge the clearness and distinctness of the form; they can make themselves plain, or just give you an idea of what they are doing. . . . How all these spirits can enter my person is a wonderful thing, espe-

cially when they are nowhere near one. They enter my forehead and go all through my body. The spirits show themselves through voices, forms, and various practices; they are very clever about some of their practices and cover them up. Now I am sort of "carrying the load" as you might say, and anyone who uses this spirit realm ought to be fair enough to keep out of my sight; I don't want to see all this business. . . . Another thing, these people are total strangers to me, and if this business is going to keep me from engaging in remunerative employment, there is going to be some remuneration, because I'm not running a free lunch counter!

In our previous instances, dissociated ideas have been expressed in terms of *thoughts or voices.* In addition to these, we find F now speaking of *forms and various practices.* Evidence has been given that the distinction between the dissociated *thoughts* and *voices* is one of degree only. So long as a dissociated idea seems to come from within the person, it naturally takes the form of a *thought.* But, if it is regarded as coming from outside, projected, externalized, then it naturally takes the form of a *voice,* because voices are the most vivid way in which ideas actually come to us from without. This is why *voices* are so preëminent a feature of dementia praecox. Dementia praecox is *par excellence* the psychosis of dissociated ideas,[42] and dissociated ideas regarded as coming from the outside are most naturally thought of as voices. Once projected, the idea takes on linguistic form, and that of spoken rather than written language. Case F shows, by the way, a rare instance of written language occurring in this way, for he says elsewhere,

She can flash a card with things printed on it; orders, or whatever she wants to say. At things I read I have taken off my hat and done lots of things to carry out her orders.

[42] Bleuler has given it the more descriptive name of *schizophrenia.*

In the dissociated *thoughts* and *voices* the patient is made to think or hear of some idea independently of his own will. The "forms and various practices" go beyond the stage of projected ideas which have only a linguistic expression. Thus, instead of merely being called a "vile name," the patient hallucinates the performance upon himself of the action the name implies. Instead of thoughts or voices, he has the hallucinatory experience of what the thoughts and voices express. Of the woman above-mentioned he says:

She transmits smells, like Limburger cheese. Also the smell of the organs, the human organs. Well, I don't know as it is Limburger cheese, but something very offensive; but then I can do the same thing to her if I wanted to. (Later) Yesterday there was a peculiar odor that was transmitted, that was very unpleasing. It was a very musty and mouldy odor. . . . They put objects in front of me, things that are displeasing. I think that ought to be stopped. (?) Personal matters. (?) Now yesterday afternoon (he describes in colloquial terms how "they" projected before him the vision of the erect penis of another patient, continually endeavoring to place it in his mouth) and that was not very pleasant. Then I have had operations flashed in front of me, but they did me the favor not to make them very distinct; they could make them pretty plain if they wanted to, and they tried to, but I retaliated by giving them one or two occurrences that had come into *my* life.

Few words could express better than these the division of the patient's mind against itself. Later he describes a little more concretely how he conceives it.

"I'm surrounded by a field of diffuse magnetism, and of course when a person enters the field, whatever he pictures or impresses mentally is reflected in the magnetic field, in volume or density as the participant wishes." The patient involved in the incident above "entered his spirit or form in the field by his imagination or thoughts. He was in his room really and it was a good joke for him. . . . I don't want my

head full of such foul stuff; dirty words, thoughts and actions. I can't cut this power off. I pray night and day to stop being a sewer, a reservoir of indecent thoughts, words and actions. . . ."

Thus Case F exhibits dissociated ideas appearing as the patient's own "mind-talk," as outside voices imposed upon him, and as hallucinatory experiences of various kinds, to which he is subjected. He shows a full variety of the types of dissociation that ordinarily take place with the subject aware of them all the while. He shows them merging one into another. Case H, which follows, bridges the gap between this dementia praecox type of dissociation and the dissociation of the somnambulistic, multiple personality type. The essential thing in the dementia praecox type is that the dissociation is manifested within the awareness of the main personality. It hears the "voices," and is amused or annoyed by them. The body performs this or that impulsive act, without the intention, perhaps against the intention, of the main personality. Somnambulistic dissociation implies a longer and more complete suspension of the main personality from the voluntary control of the organism. This voluntary control is assumed by the dissociated state. There should also be an amnesia of one of these states for the other. In Case H which follows we shall see combined the dementia praecox and somnambulistic features. In her, another mind system (somnambulistic) takes control of the body, at intervals, and operates it independently and against the wishes of the main personality. Yet the main personality is not in absolute abeyance; it is aware of what is going on though powerless to interfere (dementia praecox).

In the beginning, Case H manifests dissociated

thoughts and voices in ways now familiar. For example,

She speaks at first of ideas often *coming* to her, without externalization, or indeed, so far as this expression goes, abnormal dissociation. But further, "Sometimes it seems as though the voices were a person, and again a voice right in my form. For a long time I had the impression that it was in my body, but now I feel that they are using my voice. . . . It is not in my mind; it is as if they were using my tongue and lips." At first the voices are dissociated from the main personality, but still within the body; later projected. For laughing without reason, "O, I was just listening to the voices." She cannot (or will not) always remember what the voices say. (*Cf.* p. 136.) Among other things they have called her the Mother of God, Joan of Arc, Catherine of Siena; have told her her mother and sister are dead, though she knows it is not so. The voices are not always the same; sometimes two are heard contending with one another. They tell her to do various things, mostly of some inconvenience to herself, such as sitting with her back against the rods of the bedstead, or refusing to take a bath though she wants one. "The voices told me it was wrong to lie on the mat, . . . so I got up, but later they said it was all right so I did lie on it." She speaks of a "conflict of forces" in her mind: "One seems to want to help me get out of the hospital . . . and the other does not want me to get well." "The voices call me all sorts of horrid names, and I try not to listen to them. . . . Let me listen! Something just called me by a horrible name." She had been hearing voices of father, brother and other people. At first they were pleasant, later said she was Eve, and the cause of all the sensuality in the world. . . . "I can hear those voices tempting me to do wrong, and I try so hard not to listen to them. . . . I do so want to be a pure woman and live a pure life."

In the subsequent stages of her illness, she describes herself as taken possession of by another state, which she calls the *automatic*. We have no introspective record of the automatic's mental processes, but its behavior was

such that it could evidently carry out purposive actions. It represented an extremely irritable mood, not accessible to introspective analysis.

The first sign of this dissociation of voluntary control is from an early period of the illness, going much further back than any record of the automatic. Speaking in a rather high tone, she says:

"This is not my natural voice; it is a white sisterhood woman controlling me; that is one way they speak to me, by controlling my tongue as they control mediums."

She gave her first account of the automatic expressions in explaining some outbursts of irritability. "It is not I who do these things, it is the automatic." . . . It was as if someone else took possession of her; when she struck anyone, it was like the automatic striking out with a wooden arm. She was conscious of it like a looker-on. She knew what was done, saw what was done, but could not appreciate that she was doing it, nor the import of it. "It is as if I was half conscious." She denies that it is due to influence (externalized), says it is simply the automatic working through her; and in regard to abusive talk, "that is not I, it is the automatic talking." She apologizes for her behavior, saying she had nothing to do with it; it was the automatic which controlled her. (The actions of the automatic are actually quite contrary to her character before illness, or her main personality in the psychosis.)

In describing the relations between the main personality and the automatic, she says it is as if she were outside, far away, looking at the automatic. She remembers thoroughly what the automatic does. On the other hand, she says (voluntarily) that the automatic does not know H (herself), and has no memory or connection with H. This really means that H's main personality, while it can watch the automatic at work, has no knowledge of the automatic's mental processes; the "automatic" actions indicate that it may have some connection with her, though one of opposition. For example, she wrote little sayings, and put them where she could see them to help her control herself when the automatic comes. The automatic came and tore them all up, also some dress-patterns which she especially wanted.

She wants to be nice to people, and the automatic attacks them, even her own husband.

In addition to the voluntary movements concerned in these actions, the automatic has the use of language. It is apparent that the automatic retains *some* memories acquired by H, but how much cannot be said with certainty. We cannot be sure that the automatic destroyed the dress-patterns or attacked the husband, particularly *because* H desired otherwise. The automatic is too universally destructive and abusive for this. The mental level of the automatic is rather that of the somnambulistic than of the full-fledged alternating personality. But in addition to the dissociated system which makes up the automatic, a shred of the main personality persists all the while, noting what is going on. The dissociation is an unusual combination of somnambulistic with "schizophrenic" features.[43] As Felida links the alternating personalities to the manic-depressive conditions (p. 183), so does H show their continuity with dementia praecox.

In sum, the sixth type of dissociation (trends not integrated with the main personality, though the main personality is aware of them) is shown by the above cases in the following forms:

a. Case F. His mind talks to him; does not have tone quality.

b. Case L. "Dictates" to perform certain actions; not supposed to come from outside.

c. Case L. Projection of ideas in accord with the main personality, hearing them reflected in the speech of other persons.

[43] A remarkable account of simultaneous dissociations has just appeared in W. F. Prince's "The Doris Case of Quintuple Personality," *Journ. Abn. Psychol.*, 11 (1916), 73–122.

d. Case M. Hears voices of familiar people saying pleasant or indifferent things. Annoying at times.

e. Case N. Dissociated ideas referred to the "Divine Mind"; at first as thoughts, later apparently as heard words.

f. Case A. Sometimes attributes ideas to other persons who are named, sometimes recognizes them as within herself, but not in the main personality. More emphasis on pleasant features.

g. Case D. (Graves' Disease.) Voices of acquaintances; as she recovers, lose their tone quality, and come simply as thoughts. Illustrates varying degrees of insight. In a later attack, the dissociated trends take on a sexual character.

h. Case B. Auditory hallucinations, referred to known persons. Funny, indifferent and abusive.

i. Case C. Thoughts and voices independent of volition; at first not externalized, later externalized; then referred to definite persons. Funny, indifferent and abusive in content.

j. Case J. Repulsive ideas of a sexual nature, not clearly projected.

k. Case F. Various hallucinatory sights, smells, voices, predominantly sexual. Externalized in a mystical way.

l. Case H. Dissociated ideas, gradually externalized as voices. Pleasant and unpleasant, later insulting. At times the main personality is displaced by secondary state (the automatic); the main personality at these times is dimly aware of what the automatic is doing.

Upon the basis of the principles thus illustrated and of the realistic details which the cases present, we may proceed to a study of the manner and mechanism of dissociation of trends and ideas, and of the rôle of dissociation in the formation of delusions.

CHAPTER VI

MECHANISMS IN DISSOCIATED IDEAS

It is natural to ask such patients as we have been describing, why they feel certain ideas or actions to be not their own; how the patients know this to be the case. They reply that the ideas are intruded, not connected with the central train of thought; that they are of things without personal interest; that they are of things repulsive; and that the actions are opposed to natural inclinations. For these reasons, they appear to be foreign. This is as far as the patients' introspection goes. In addition to being dissociated (not recognized as part of the main personality), the trends may be projected, externalized (referred to an outside source). This externalization seems to come with the further development of the psychosis, and to disappear as the psychosis improves. (Case D.) Repulsive ideas are most uniformly referred to a source outside the main personality. They have a special motive for being projected, as the main personality is ashamed of them.[1] But the repulsiveness is not a necessary motive for projection, since we have examples of indifferent and humorous ideas also externalized.

Some kinds of dissociations occur in which physical causes are clear. A blow on the head may occasion a

[1] In paraphrase of Nietzsche, "Thus I think," says my consciousness; "I cannot be thinking thus," says my self-love and will not be denied. And at last, consciousness yields.

loss of memories for events immediately surrounding the blow. Diseases of the brain-substance bring about losses or disturbances of its activity, according to the part of the brain in which the disease is located. Many very interesting disturbances of speech, included in the term *aphasia,* are brought about in this way. In the minuteness and delicacy with which special functions are dissociated, aphasia yields but little to the kinds of dissociation already considered (pp. 157–161). The extreme of simultaneous dissociations – with one side of the body normal and the other side apractic or delirious —seems to have arisen under organic brain disease.[2] The dissociations considered in this and the previous chapter are not similarly related to organic brain-disturbances. Indeed, it is difficult to relate them to any traceable brain-changes at all.

Yet, there is some similarity in the dissociations traceable to organic sources, and those not so traceable. A person may have an organic paralysis or a hysterical paralysis, an organic anesthesia or a hysterical anesthesia, an organic amnesia or a hysterical amnesia. One ground of distinction lies in the readiness with which the lost functions may be demonstrated in the unconscious. If a blind person avoids obstacles suddenly put before him; if a person whose eye muscles are paralyzed suddenly looks to one side at an unexpected object; if a lost memory can be recovered in automatic writing, such a dissociation is functional. Such dissociations are not accompanied by gross changes in the brain. A trend dissociated by destruction of brain-tissue cannot so well be recovered in the unconscious. A man whose optic centers

[2] Liepmann, Bleuler, *ref.* A. Meyer, *Psych. Bul.* I (1904), 277–286.

are gone will not avoid, or turn to look at, the unexpected object.

Another ground of distinction between the "organic" and "functional" dissociations may be expressed as follows. Organic dissociation depends more on the thoroughness of learning, of "impression" or *Einprägung* as the Germans call it. What is least well learned is easiest dissociated. Recent memories go before old ones. The case of aphasia almost always retains a few common words. That is, in organic disorders, what is dissociated depends first on the portions of the brain disordered, and then on the firmness with which the trends thus affected have been grounded in memory. It has long been felt that functional dissociations do not follow any such rule, and are not to be interpreted by any such principle. What trends are dissociated functionally depends more upon their special *meaning* to the individual, and their *relation to other trends* in the personality, that is, upon their functional value for the personality.

As was brought out in the second chapter, all our behavior, bodily and mental, is the sum of certain trends of conduct. Upon three fundamental trends — hunger, race-preservation, self-preservation against enemies — nearly every one is agreed. Additional trends are classified differently by different investigators. Chapter II considered the various ways in which these trends cross and interfere with one another. On page 39 we spoke of recurring to the mental manifestations of conflicting trends. Dissociation is among the most important of these. Dissociation through conflict occurs when a trend opposed to another trend or system of trends is manifested independently of them. Trends dissociated from the main personality are often and obviously trends with

which the main personality is in conflict. To give the most striking instance, the sexual trends are in strong conflict with the main personality in many women, who are taught that it is wicked to have thoughts of them. Being thus in conflict with the main personality, the sexual trends are most readily dissociated from it. Then the "voices" tell the woman that she is "bad."

It is through this incompatibility of the sexual trend with other trends of the main personality, that the sexual trend is so liable to dissociation from it, while other trends are retained in it. The central idea is, that a dissociative process strikes upon trends which are or represent [3] trends which were incompatible with other trends more closely knit with the main personality. They were more easily dissociated from the main personality by reason of this special incompatibility, or conflict.

For the present, it is "conceptual license" to suppose that all dissociation of trends is a manifestation of conflict in trends. The most to be attempted here is to illustrate how conflict manifests itself in some typical examples of dissociation. In the state of our knowledge there should be no thought of demonstrating, in every case, what conflict is behind the dissociation. We have described the different forms which the dissociations take. The systematic anesthesias, paralyses, amnesias, fugues and multiple personalities, are hysterical forms of dissociation. Schizophrenic (dementia praecox) forms of dissociation are the thoughts, voices and other hallucinations or controlled movements that occur within the awareness of the main personality, but are not recognized as a part of it. In the hysterical dissociations, the dissociated trends become part of the unconscious. They

[3] "Dissociative Symbolism," 218.

are demonstrable there by automatic writing, etc. By analogy, the dissociated trends of dementia praecox are sometimes spoken of as "manifestations of the patient's unconscious," although, of course, the patient is aware of them. We shall deal chiefly with the dementia praecox types of dissociation.

"When that which is inhibited is a sentiment possessing an intense emotion, the sentiment tends to become dissociated from the personal consciousness, and free to become by the force of its own emotional dispositions a sub(*un*)conscious process." [4] In these words Prince brings out the main factors in dissociation by conflict. Intense conflicts arise about trends which are at once strong and blocked; and the trend which is sufficiently strong and sufficiently blocked is split off, dissociated.

As we saw in Chapter II, the greatest conflicts (we speak now only of internal ones), center about the sexual trends. Since they are the most conflicting, and perhaps also because the situation they seek to realize is more definite than in other trends, we find that they are especially subject to, and give the best illustrations of, such dissociation from the main personality.

The case-material above cited does not show the real frequency with which sexual trends are expressed in dissociation. To investigate this more fully, a hundred consecutive cases of dementia praecox [5] were studied. The cases in which sexual trends were directly expressed were put into a few natural groupings. In many cases no sexual trends were directly expressed. In these, the dominant form in which the trends appeared, was noted.

[4] *Unc.*, 488. (Italics author's.)

[5] Manhattan State Hospital material; kindly furnished me by Dr. G. H. Kirby.

Men		Women	
Hallucinated or delusional response in opposite sex	5	Hallucinated sexual approach	6
Hallucinated calling of "vile names" (not necessarily specified)	6	Delusional desire from male sex	4
Other delusional or autochthonous ideas of sexual coloring (e.g., performance of *cunnilingus*, or unspecified "sexual hallucinations"	9	Dissociated ideas of sexual nature (calling "bad woman") and the like, not necessarily specified,	12
		Delusions of infidelity of husband	4
		Other ideas of sexual coloring (e.g., to be put in a disorderly house, sex organs worked upon with electrical machines)	9
Patients directly expressing sexual trends	20		35
Religious trends	4		4
Persecutory trends	12		5
Economic trends	1		1
Trends, if present, not elicited	12		6
Patients without expression of sexual trends	29		16

In these cases, twice as many men as women give no expression to trends, and are inaccessible — a sex difference that is not confined to dementia praecox. Another such difference may be reflected in that persecutory trends are also twice as frequent in the men as in the women. Women generally endure more, without feeling persecuted, than men. The small part played by economic trends (ideas of great wealth, etc.) is striking. Manic-depressive or general paralytic cases would hardly show this. On the other hand, where sexual trends are directly expressed, they are not far from twice as frequent in the women. This difference is the natural effect of dissociation through conflict. It is difficult to say whether sexual trends are stronger in women or men. But there can be no question that, in proportion to their strength, sexual trends are far more blocked in women. The sex tabu is far heavier upon them. Their sex con-

flicts are far stronger, and this is expressed in the greater prominence of the dissociation of these trends in dementia praecox.

The specific rôle of blocking is well shown by a sex-difference in the content of these trends. In normal life, women have great resistances toward giving themselves to men, while men have comparatively few subjective resistances toward possessing themselves of women. In the material quoted above, there is no case of a man's hallucinating the possession of a woman. Indeed, only one instance is recalled by the writer, in which the man *hallucinates* normal sexual intercourse. Men dream of it, fancy it, often enough, but it is not dissociated from the main personality. That is, the trend of sexual intercourse, not being in great conflict with the main personality of men, does not readily become dissociated from the main personality.

"The voices," with which women so generally accuse themselves of being "bad," do not accuse men of illicit relations with women. That idea is not in deep conflict with the main personality of men. Where the woman is called "bad," the man hears himself instead called by an unprintable name which designates the part played by Case F in the incident between him and another patient. (p. 198. *Cf. also* Case J.) The dissociation does not in men strike the normal heterosexual trends, because the main personality of men is little in conflict with them. Instead, it brings to light a homosexual trend, toward which the normal man feels tremendous resistance.

In women, on the other hand, it is the normal heterosexual trend which is dissociated, for it is almost as much blocked in women as homosexuality is in the normal man. In six of the above cases, women hallucinate the sexual

approach of men, in either attempted or accomplished intercourse. There is nothing corresponding to this among the men. With them, the trend limits itself more to the idea of some woman being secretly in love with the patient.

While the above is said of dementia praecox, it may be mentioned that the same thing is observed in alcoholic hallucinoses. There too, the hallucinations accuse women of being "bad," and men of *fellatio,* "though here is a more general setting of hallucinated opprobrium." (August Hoch.)

We have amply seen how conflicting trends dissociated from the main personality manifest themselves to it in the form of voices and other hallucinations. The main personality perceives these, without accepting them as a part of itself. The delusion, on the other hand, is a false idea which is accepted by the main personality. A pertinent question in regard to delusions suggests itself: Why, so long as the main personality cuts loose from reality, does it not cut loose in directions which are agreeable to it? This is notoriously not the case. The majority of delusions are not pleasant but disagreeable to the main personality. Clearly, though they are accepted as part of the main personality, their content is not determined according to the trends of the main personality. It is determined by trends which lie outside the personal consciousness.

Sometimes we are fortunate enough to get the same trend expressed not only as a delusion in the main personality, but in its dissociated form as hallucination. This is the case among delusions of marital infidelity, such as are mentioned above. The relation of the two is instructive. A woman, in the main personality, is

jealous of her husband; in her dissociations, she hears the voices of men planning to ruin her own virtue; a man came to her bed at night and tried to assault her. In another woman, the main personality harbors the *delusion* that the husband is unfaithful; in her *hallucinations,* people say that she herself is a prostitute. Another woman is told by the Virgin Mary that her husband is unfaithful; *per contra,* people try to make her fall in love with some one else. Another has delusions of marital infidelity with persecution. She has hallucinations of snakes put in her own and her children's mouths. Observe that the accepted and repudiated ideas have a complementary relationship in each case. Each trend is an expression of sexual maladjustment, with an attempt to solve it. In the trends accepted by the main personality (delusions and the friendly voice), the solution is an orthodox getting rid of the husband through his unfaithfulness. In this delusion, the trend is thus modified into a form that the main personality will accept. In the trends repudiated by the main personality (hallucinations), illicit satisfactions are provided for the patient herself.

From hysteria comes the "nervous pregnancy"[6] in which dissociated symptoms of pregnancy appear in women desiring a child. Here the conflict is with reality; the trend desiring a child splits off and behaves as though the child were there. The "betrothal delirium" is cited by Hart in this same connection. This is a dissociated state developing in women whose lovers have left them. The desires are imagined, or hallucinated, as fulfilled.

An important part played by dissociation in making

[6] *Maj. Sympt.,* 263.

such delusions possible is well expressed in these words of Janet:

> It is precisely because the subjects have forgotten everything, because they are no longer restrained by any sensation, by any thought relative to the reality that surrounds them, that they allow the ideas suggested to them to develop freely. When they express some idea, their conviction is childish. It seems very strong because it rests on astonishing ignorance. Objections, impossibilities, contradictions, do not reach their minds in the least.

This forgetting, or ignorance, under which the delusion is possible, is a dissociation of the ideas that would correct it. It is through such dissociation that delusional trends are not subject to any correction from the world of experience. Delusions are mental trends that pursue their course independently of real surroundings, in the same sense that our breathing pursues its course independently of what we read. Just as, in our first illustrations, the signing of the letters conflicts with the pursuit of the mathematical problem, so the belief that one is Julius Cæsar conflicts with maintaining the most elementary relations with one's actual surroundings. Therefore, in normal individuals, the belief that one is Julius Cæsar does not arise. Only through the suspension of that logical conflict (the conflicting elements dissociated from each other) can the belief in being Julius Cæsar or what not arise. Delusional trends are kept from developing through their "integration" with other mental trends that correct them. If normal integration breaks down, the trends develop uncorrected. If it is this special integration with *corrective* trends that breaks down, there comes a delusion. Our patient then says, "I am Julius Cæsar." If the dissociation is from the main personality, it results in a *mind talk,* "My thoughts

tell me I am Julius Cæsar." It may then be integrated with the corrective trends ("but I know I am not so"). If the dissociation is from the individual altogether, the trend comes as a *voice:* "Christ says I am Julius Cæsar." (*Cf.* Case J.) If the distinction between image and reality breaks down, hallucinatory experience results: "On the Lupercal Mark Antony thrice offered me a kingly crown." This shows how the delusion is related to other kinds of dissociation. It is according to what is dissociated from the trend, whether it becomes a delusion, mind-talk, or hallucination.

To the casual observer, a striking feature of mental disease is that patients express false ideas without acting upon them in any way. A man who believes himself king of the world still accepts the feeding-chair for a throne, and the floor-polisher for a scepter. Such patients are said not to *react to* their delusions, because they do not behave in ways consistent with them. ("Faith without works.") The man who has the wealth of the world begs for a trifle.[7] Such delusions are trends quite isolated from the rest of the personality. They are dissociated not only from the rationally corrective trends, but from all other trends determining the patient's conduct. They are integrated only with the "warmth and intimacy" which makes them still part of the personal consciousness. The patient presents the simple, unelaborated belief: *I am king of the world.* That is all. It is dissociated from everything else in the individuality.[8]

[7] Hart, "Psychology of Insanity," 55–57.

[8] A person may have an experience, realize that the experience has happened to some one, but not that it has happened to himself. *Cf.* James, "Principles," I, footnote, 273–274. Also "David Copperfield," closing pages of Ch. 24. This would represent a dissociation of the "warmth and intimacy," at least from the immediate situation, and probably from much else in the personality.

In both normal and pathological thinking, ideas which are contradictory usually correct or exclude one another. It is as impossible for a thing to "both be and not be" as it is for James's philosopher and lady-killer to "keep house in the same tenement of clay." If correct (Keller's *verifiable*) ideas are retained the result is what we have called logical or realistic thinking. A delusion results, as we have seen, when corrective ideas are dissociated. That is a form of "autistic" mental activity. But autistic thinking often shows a dissociation of such conflicting ideas *from one another only*. In such a case the conflicting ideas persist side by side in the main personality, each unmodified by its logical inconsistency with the other. Frazer tells of astronomers who can predict eclipses, and who yet believe that eclipses are caused by a dragon swallowing the sun. "Unless," he goes on, "we allow for this innate capacity of the human mind to entertain contradictory beliefs at the same time, we shall in vain attempt to understand the history of thought in general, and of religion in particular." The knowledge that predicts eclipses is dissociated from the belief in the dragon, so that neither influences the other. Religion can establish close contact of such conflicting ideas, without any logical interaction:

> He that foresees and foredecrees
> In wisdom ordered has
> That man's free-will, electing ill,
> Shall bring His will to pass.[9]

Even though there is some notion of their conflict, each idea may be held so strongly that neither can be given up. The doctrine of the Virgin Birth furnishes a prominent example: "Joseph and Mary were married,

[9] "The Day of Doom" (1661).

but the marriage was never consummated. Yet it was a true marriage and Mary became a mother, but Joseph was not the father. Mary was a Virgin nevertheless." [10] The Athanasian Creed brings the following:

> . . . Neither confounding the Persons: nor dividing the Substance. For there is one Person of the Father, another of the Son, and another of the Holy Ghost. . . . So the Father is God, the Son is God: and the Holy Ghost is God. And yet there are not three Gods: but one God. . . . The Father is made of none: neither created, nor begotten. The Son is of the Father alone: not made, nor created, but begotten. The Holy Ghost is of the Father and of the Son: neither made, nor created, nor begotten, but proceeding . . . our Lord Jesus Christ, the Son of God, is God and Man; God, of the Substance of the Father, begotten before the worlds: and Man, of the Substance of his Mother, born in this world; . . .

Viewed genetically, the lines from the "Day of Doom" represent a primary stage of complete dissociation of the conflicting ideas. In the instances of the Trinity and the Virgin Birth, the difficulty is appreciated. Logical integration has commenced. The ideas conflicting with the prevalent notions had been dissociated, but are now beginning to assert themselves. The two conflicting trends of thought are maintained through special rationalizing.

The following dementia praecox Case R remarks of two conflicting statements:

> Both of those things are true and both are lies, you can put them both down. (Can a thing be both a truth and a lie?) Yes . . . (On another topic.) Loads of people who are interested in me and loved me . . . I am interested in all and love all — (then, with a sneer) I don't love all — by any means.

[10] Sumner, "Folkways," 401–402.

Before leaving the topic of the dissociated existence of conflicting trends, attention should be called to some cases in which a dissociated trend is very directly opposed by the counter-trends. A patient hears voices telling her to get married; she answers them that she does not wish to. This interaction is between trends of the main personality and a trend of the "unconscious." Different trends may also interfere with one another, without their relations to the main personality being clearly different. Prince gives an amusing example of this.[11] A patient's right hand is engaged in automatic writing. The left hand observes what the right hand is doing, and objects to it; seizes the pencil and hurls it across the room — all without the main personality's being any the wiser.

The mental processes in the Lusitania-cap dream (p. 120) show the same thing. The dreamer greatly desires his cap, that he may leave the sinking vessel. If the trend desiring the cap were unopposed, the cap should fly miraculously to his head; appear lying on the deck at his feet; the steward should hurry up with it; or at least there should be no trouble in locating it. But though the cap is ardently desired, observe that it is frantically withheld. Rather than risk the chance of finding that cap, the dreamer forgets the way to his stateroom. Of course all this ado is additional testimony that the cap is no conventional piece of headgear. The writer has noted the same type of conflict more plainly in dreams in which he would make appointments to meet people toward whom he had some opposition, and would then lose his way in reaching the place of appointment.

A girl quoted by Pfister learned from playmates, who made sport of her ignorance, certain false and masochistic

[11] *Unc.*, 480.

fancies concerning sexual matters. She developed a stereotyped nightmare, in which she walked along a straight road between two swamps. Many hands were stretched out from these, to draw her down, but apparently never did so. Pfister cites this as representing the conflict betwen trends of yielding to the fancies, and trends of escaping from them.

These two cases bring up another aspect of dissociation, with whose brief discussion we must close this chapter. The symbolizing tendency of dreams has here distorted the conflicting trends from their original form.[12] The fancies of the mire of unclean thoughts become hands stretching out from a literal swamp. Not only does the trend for finding the cap conflict with a countertrend for losing it, but it is not really a cap which is being lost. The dissociation combines with a symbolizing of the trends which are dissociated. We met phenomena of this sort in Chapter IV, under the head of *affective symbolism.* There, we emphasized that the affective symbol *derived* its affect from an original experience the memory of which might be lost to awareness. Now, we emphasize that an original experience, *though lost to awareness,* may still be represented in consciousness by some trend in symbolic association with it. Symbols whose originals are thus dissociated from awareness may be termed *dissociative symbols.* A toy dog is to the old maid who cherishes it the affective symbol of a human love-object. It becomes also a dissociative symbol, if her main personality fails to realize, or repudiates, its connection with the original trend. Dissociative symbols

[12] This is neatly expressed by Case F in speaking of the spirits "showing themselves through voices, forms and various practices; *they are very clever about some of their practices and cover them up.*" (p. 197.)

are the most difficult and uncertain of all symbols to demonstrate. "While in a state of conservation (in the unconscious) they (the original trends) are capable of undergoing elaborate fabrication (symbolic distortion) and afterward appearing so thoroughly transformed in consciousness as to be superficially unrecognizable." ". . . Hallucinations and bizarre notions and delusions . . . are often due to the resurrecting and fabricating effect of unconscious complexes formed by the earlier experiences of the patient's life."[13] Prince and Tait proved the dissociated original experiences in their "bell-tower" and "brown" cases (pp. 128ff.), respectively, by direct appeal to the unconscious in which the dissociated originals of the affective symbols were buried.

The symbolisms of dreams are regularly of the dissociative type. That is, we are seldom immediately aware of them; and when they can be established, it must be through some special searching for the originals in the unconscious. The examples quoted to illustrate dream symbolism in Chapter III (pp. 99ff.), represent a "nascent state" of dissociative symbolism. The original is not so far dissociated from awareness that the connection between it and its dream-symbol is lost to awareness. Prince gives a good example of such a nascent dissociation, in a dream also symbolizing a conflict: (Quoted from *Unc.*, 98.)

> The subject dreamed that she was standing where two roads separated. One was broad and beautiful, and many people she knew were going that way. The other road was the rocky path, quite dark, and no one was going that way, but she had to go. And she said, "Oh, why must I go this way? Will no one go with me?" And a voice replied, "I

[13] *Unc.*, 100, 263. (Parentheses author's.)

will go with you." She looked around, and there were some tall black figures; they all had names across their foreheads in bright letters, and the one who spoke was Disappointment; and all the others said, "We will go with you," and they were Sorrow, Loss, Pain, Fear, and Loneliness, and she fell down on her face in anguish.

There were actual conflicts and sorrows in the patient's personality, with which the dream-ideas stand in near association. The *nascent* character comes out in that the figures representing Disappointment, etc., are not unrecognizably disguised, but are appropriately dark, and bear their names upon them.

In another instance, a forgotten idea, not an unpleasant one, reappears, verifiably in awareness, but in a distorted form.[14] The patient had lost a check, searching for it in vain for five days. Early one morning she had a vision of Christ, and at that moment experienced a feeling that she would find the check. The vision moved toward her bureau. Automatically (without "any conscious idea that the check was there"), she went to the bureau and found the check. The unconscious memory of the location of the check manifests itself to awareness in a figure of Christ which vaguely indicates the place.

A girl reported by Pfister[15] had as a child held the belief that babies are born through the mouth. At the age of about sixteen she begins to vomit regularly at her menstrual periods. The cessation of this vomiting, when its analogy with the former belief is brought to the girl's awareness, is evidence of unconscious connection between the two, the vomiting being a dissociative symbol of the sexual trend.

[14] *Unc.*, 189–190.

[15] *D. psa. Met.*, 128.

A painful delusional trend is often to be explained by some connection with another dissociated trend. August Hoch has called attention to a type of psychosis among women in the content of which the *father* plays a very prominent rôle. The essential trend of the psychosis is a *return* to the father. Then a patient's idea of being dead may arise from simple association with the fact that the father is dead. Jung mentions a case in which the father was an especially wicked man; the patient desired to die that she might go to hell. Such a trend does not genuinely represent a belief in deserving hell, much less a desire to go there. It is but the symbolic expression of a dissociated trend toward the father.

Another frequent topic of dissociative symbolism is an identification of sexual with electrical processes. Associations between the two which might give rise to such symbolism are not difficult to imagine. Both are specially associated with personal influence and attraction (magnetism), also between persons separated at a distance. Weak electric shocks again have some sensory likeness to the thrill of mild sexual stimulations. The analogy is not confined to incidental metaphor or mental disease. Case F complained of a *loose flow of personal magnetism.* It would come in waves; run up and down the spine for two or three seconds, a pleasant sensation. Others of F's fancies presented this symbolism in a more dissociated form:

"The idea came to me that I was giving her electric baths; shooting these shafts of light inward into her body." It is a shaft of magnetic power, which he can put into her body at any desired point. He roughly sketches it on a piece of paper. It can be made very large or very small, so that its entry is almost like the prick of a needle. "Probably she at first did not have this power, but I kept putting these

shafts into her until her power was so strengthened that she could transmit her form." Her "transmitted" form serves him for masturbation fancies. Associated with this was the idea of a luminous pillar extending above his head like the beam of a searchlight. Being advised to give up the fancies of this woman, he said it was his relationship with her that kept it up straight; if he ceased his communication with her it might weaken, bend over to one side, and thus overbalance him.

Another dementia praecox case presents a special fancy for a certain girl. Although he has had pretty free sexual intercourse otherwise, he has not had intercourse with this girl, only caressed her. Nor does he imagine intercourse, or some less conclusive normal relationship with her, in his psychosis. Instead, she puts a wireless apparatus upon him; giving him thoughts, and reading his own. Thus the trend toward the girl does not take the form of a normal possession, but is expressed, as with Case F above, in electrical communications.

The concept of dissociative symbolism is, that a manifest symptom of some kind may be symbolic of another trend which is dissociated from awareness. Symbols are formed through any and all kinds of association between symbol and thing symbolized. As was said in other words in Chapter III (p. 95), we must suppose that symbols are formed through the same kinds of association, whether or not we are aware of the whole symbolic process. As these connections may be quite far-fetched in the symbols immediately recognized, we need not expect them to be otherwise in the dissociative symbols not so recognized. With this in mind, the concept of dissociative symbolism is the readiest interpretation of a large group of hysterical phenomena. As Prince remarks:

. . . When the disaggregation of personality is brought about by the force of a conflicting emotion, the resulting hysterical state . . . may be robbed of certain sensory or motor functions, *although these functions are not, as far as we can see, logically* related to the emotion or the ideas coupled with it. Thus a person receives an emotional shock and develops a right sided anesthesia or paralysis — a very common phenomenon . . . again, when amnesia results, it may cover a past epoch — retrograde amnesia — without obvious reason for the chronological line of cleavage. (*Unc.*, 505, 506.) (Italics author's.)

The anesthesias, paralyses and amnesias are to be regarded as representatives of other trends lying in the unconscious. These manifest symptoms are modes of expression of the trends buried from awareness. What the buried trend behind such a symptom is, or how the particular anesthesia, paralysis, amnesia or other hysterical symptom comes to be associated with the buried trend so as to represent it in awareness — can be determined, if at all, only by exploration of the unconscious.

The chief concepts to be gained from our study of dissociation are two:

First, *the compound structure of mind,* and the rather unstable nature of that compound. Study of the brain long since led to the abandonment of the idea that the brain was a homogeneous organ. Certain parts of the brain are devoted to special functions. The disease that attacks certain parts of the brain affects certain functions, leaving others relatively intact. Neither is the mind homogeneous. It is made up of trends, just as a brain is composed of nerve tracts, or a switchboard of wires. The " main personality " is a name given to a dominant combination of these trends, which are part of consciousness. But new trends are continually being added to this combination, and others are dropping out from it. It

appears that any mental trend or combination of trends may be dissociated from any other trend or combination of trends. Every trend in the mind has potential autonomy of other trends. We have been describing some ways in which such autonomy, or independence, is manifested. It has been seen that they analyze and recombine in an infinity of ways. Mental stability means the stability with which the compounds, or systems, of mental trends are preserved.

Second, *the import of the unconscious.* The material surveyed throws a side-light upon these relations. Our concern has been with the description of the trends which are split off from the main personality, and are demonstrable in the unconscious. The amount of these is so great as to indicate that, as any trend may split off from the personal consciousness, so may any trend be recovered to it which has ever been in it, or even brought to the field of awareness without its having ever been there,[16] if only the experience left its proper impress upon the organism.

The material presented illustrates the facts of dissociation, and the ways in which dissociation is manifested. An *unconscious,* made up of mental processes dissociated from the main personality, plays the leading rôle in the mental symptoms of hysteria and dementia praecox conditions; and, there is reason to think, also in the manic-depressive psychosis. From the first two of these sources has come our most definite knowledge about the unconscious. This knowledge has been, therefore, chiefly associated with mental pathology. It is characteristic of these mental diseases to afford direct evidence of the unconscious in the form of automatic writing, hallucina-

[16] *Unc.,* 52ff.

tions, somnambulisms and the like. They are like a storm which tosses the ship so as to give fitful glimpses of much that is below the normal water line of consciousness. In the healthy mind, the boundaries between the conscious and the unconscious are more firmly held; it is like a ship riding a calm sea, and the hull below the water line is invisible. But that portion is just as essential in one ship as in the other. It does not follow that because the unconscious is less manifest, it is less significant in normal life.

In a previous chapter was mentioned the inadequacy of the conscious to give satisfactory explanations of men's voluntary actions, although such actions have conscious antecedents. "And the more sincerely one seeks to trace the actual course of psychogenesis," concludes James, ". . . the more clearly one perceives 'the slowly gathering twilight close in utter night.'" Since these words were written, it has been recognized that this darkness covers no hopeless waste of inborn "behavior-patterns." The modern concept of the unconscious postulates that *memories* or traces of the individual's experience,[17] of which the person is unaware, play a determining rôle in both his actions and thought. James made this quite clear in reference to habitual processes. One's skill in tennis or chess does not depend on being conscious of all one's experience in them, so long as one has had the experience. Acquired and unconscious mental processes are clearly effective in habitual action. But such effectiveness is probably far wider than this, and extends to the most distinctive and momentous passages of life. Men's failures to act rationally, perhaps most conspicuous in the love-life, are acts in accordance with

[17] *Cf.* Prince's *neurograms;* von Bechterew's *Spuren.*

reasons that are unconscious. The concept of the unconscious considers these determined not only by innate perversities, but also by experiences buried out of awareness.

The corollary is the widest possible application of the law of habit. Many games, though forgotten, make the skillful chess player. But, experience is not thus dependent upon repetition, to be effective in the unconscious. This point was made in Chapter IV (p. 133). It is not only good and bad *habits* that acquire an unconscious hold on men for good and ill, but this is true of good and bad mental trends of all kinds. Each mental process, habitual or incidental, leaves its mark upon the personality, sometimes conscious, mostly unconscious. The "memory of a good action" is precious long after the deed is forgotten. Man's special faiths, interests, hobbies, friendships, enmities, ambitions and infatuations are fashioned, not from the fraction of experience he can remember, nor yet from innate features of being he cannot control; but from a body of unconscious experience vaster than knowledge, which imparts to the objects of consciousness, by affective transference, their human values. This mighty and invisible potency of forgotten experience gives added import to all education, and sanction to each daily task.

CHAPTER VII

EXPERIMENTAL APPROACHES

PSYCHOLOGY partakes of both social and natural science in its subject matter, and in its relation to experiment. "The best the social scientist can do," writes Keller,[1] "is the worst the natural scientist has to do — to wait on nature and history to perform quasi experiments for him." Crile sets more value on nature's quasi experiments in the field of mental function. "It is idle to consider any experimental researches into the cause of phenomena that have been developed by natural selection through millions of years. Nature herself has made the experiments on a world-wide scale and the data are before us for interpretation."[2] It is nature's experiments that have chiefly concerned this book. But nature's experiments in psychology, as in chemistry and physics, are not always made so that men can analyze them for purposes of application. Laboratory chemistry and physics have been of vital help in man's use of natural forces. Psychological experiments, also, analyze mental phenomena as nature does not, and make them objective as unaided reflection cannot. Against the difficulties of human experimentation, psychology sets the human importance of its problems and the precision of its results. These give to experimentation its place in the science of mind.

[1] "Societal Evolution" (1915), 128.
[2] "Origin and Nature of the Emotions" (1915), 12.

Experimental psychology attempts the measurement and comparison of the mental qualities of individuals. Among the first mental differences thus measured was the precision of certain time-observations in astronomy. This was called the "personal equation," as though it were the chief or only measurable individual difference; which, indeed, so far as astronomy was concerned, was the case. The science of mental measurements has grown with the devising of the many other ways in which attributes can be measured and compared.

Such differences appear in all measurements of individual attributes. But some attributes are much more important, or have a much wider importance for life, than others. In ordinary life it is more important for a man to have good sight than a good sense of smell. For a tea taster, a hyperacute sense of smell would be more important than a fine ear for music. Most people, however, would prefer the latter. It is not so important to remember a mass of facts, as to be able to reason clearly about what one knows. The several measurements of psychological functions are of interest according to the value for human adaptations of the qualities measured.

For instance, we can make very precise measurements of a person's hearing, or sense of touch. A defect in the former has to be pretty marked before it is a serious handicap in life; much more marked than exact experiments will readily determine. In early years such defects may not be rightly understood. School children may be dull because they do not hear or see well. Simple experiments are useful in discovering and helping such cases. Some specialized occupations demand (as is true of the tea taster) an acuteness of sense that is not so necessary for ordinary life. The locomotive engineer must not be

color-blind; proper tests must certify as to this. Such sensory aptitudes are generally easy to measure; but it is only great deficiency in them that is of wide importance for adaptation to life. Experiment plays a minor part here, because the defect appears without refined observations. In the great majority, success depends on other things than the bare possession of good eyes and ears.

One may measure the muscular strength of a maximum effort, and the quickness of movement. Civilization has diminished the importance of these for adaptation to life. Generally, if these are so abnormal as to be a factor in a person's success or failure, they are evident without experimental methods. Only in certain cases, where we wish to set definite standards of muscular strength, as in candidacy for a football team, do we resort to experimental measures. Much exact work has been done in studying the precision and economy of movements, because such economy is important for industrial operatives. Experiment helps to determine the most efficient motions for the performance of a given task.[3] But adaptation to life as a whole lies not in keenness of sense, or strength and speed of movement. The race and battle are to those who make the best use of their speed and strength. Adaptation lies in the right coördination of sense and movement. The locomotive engineer's ability to tell red from green, and the strength to move the lever, mean nothing unless he can also move the lever promptly in the right direction. Let the engineer's right response to his signal be the example of right response to life in general. What experiments can we apply, to show what adaptations to life a person can make, and how well he can make them?

[3] *Cf. World's Work* (July, 1916), 321–336.

All adaptations are mental or motor *reactions.* We measure what *happens* in a person under a given experimental situation. We examine the meaning of the measures for the person's adaptation to life, and to what sort of life. A fairly detailed account of important types of experimental methods is more advisable for this chapter, than a superficial glance over the whole field. In the foreground of usefulness are series of experiments designed to trace the development of *intelligence.* They measure a person's general fund of information, and how well he can accomplish certain standard tasks. Their great use lies in promptly distinguishing children whose abnormally low intelligence makes them a drag on their schoolfellows; also in the early recognition of children whose exceptional brightness makes them worthy of special educational advantages. But intelligence is neither the sole factor in a person's adjustments, nor often the most important one. Experimental methods are likewise called upon for information about a person's emotional or instinctive life, and how this will combine with intelligence to affect his behavior as a whole. Special situations are created in the laboratory; and the manner in which the subject meets them is compared with the quality of his adjustments to the outer world. They are conceived as tests of *performance* as well as of intelligence. Light has also been sought on these points from the method called *measurement by relative position;* through direct studies of the quality of the thought processes (association); and from systematic methods of observing and interpreting general behavior. All these are approaches from different angles to the common goal of connecting something that can be objectively measured, like a laboratory performance, with the person's abilities

and tendencies in actual life. It is found that the approach is least difficult when the processes to be measured are essentially those of intellectual or motor skill. Its obscurity increases the more these processes are involved with emotional or instinctive factors. This latter phase is considered in the present chapter by the discussion of "relative position" and "association" methods. Factors from the unconscious enter to complicate the meaning of these experiments, in ways partly set forth in previous chapters, and partly to be further indicated.

We may begin with measurements of *intelligence*. There are some mental adaptations which a person must make to any kind of normal life. If he cannot make these, he is deficient. These defects are looked upon as defects of *intelligence*. The past decade has witnessed most fruitful efforts toward devising experiments which will show whether and how well such adaptations may be made. The individual's adaptability, his capacity for meeting life, increases as he grows to mature age. An infant is supposed to be helpless, and a man to take care of himself. At any given age, there is a certain capacity for adaptation which is normal for that age. The genius of Binet developed some simple graded tests which a child should pass, at each age; what he should be able to do at five years, what tests he should pass at six years, and so on up to twelve years and more. Then, if a person twelve years old could do no more than a normal person seven years old performs, he is clearly deficient, and by a measured amount. On the other hand, if a person nine years old can pass tests that one is not expected to pass before eleven years, that person is clearly superior in the qualities measured by the tests.

A convincing testimony to the value of Binet's concep-

tion is the extent to which the original tests have been revised and emended by many hands. Kuhlmann presents a revision containing tests for mentalities of one-fourth, one-half, one and two years.[4] The latest and most elaborate presentation of them is that undertaken at Stanford University under the guidance of Terman.[5] It is graded by years from three to sixteen years, there being six tests for each year up to ten years, with alternates. Sixteen years is regarded as "average adult" ability. An additional series for "superior" adult ability is also provided.

Examinations of this type have indicated that adults who fail to pass tests that are normal for twelve years are not able to maintain themselves independently in the world. Exceptions to this have been pointed out; but it remains a practical definition of arrested development to say that in these functions one does only so well as a normal five, seven or ten year old. This is the most readily intelligible means of expressing the measure of defect.

Apart from the actual tests involved, an objection to this scaling of tests by years is its cumbrousness. Expertness is required in making a large number of tests. The examiner must find the approximate level of the subject, and make tests for the years about this level. The scoring is complicated by the fact that a subject may pass tests above his age and fail in tests below it. It seemed that what the "year-scale" conception gained in superficial clearness it lost in convenience and accuracy of interpretation.

[4] *Journal of Psycho-Asthenics, Monog. Suppl.* 1 (1912), 41.
[5] "The Measurement of Intelligence," etc. (1916), 362. An extensive and classified bibliography of year-scale work is included.

To meet these difficulties, Yerkes and his pupils essentially altered the treatment of the tests.[6] They use a selected series of tests, nearly all of which are represented in the year-scales — twenty in all. They vary much in difficulty. A subject, regardless of age, receives a certain number of "points," according to the kind of test he passes. This series is called a "point-scale" instead of a "year-scale"; if the subject passes all the tests perfectly, he makes a score of 100 points. A normal adult should score not below 75 points. The nature of the tests in this "adolescent" scale is briefly as follows:

1. Chooses prettier of pictures. 2. Sees picture lacks, e.g., feet, hair, etc. 3. Compares lines and weights. 4. Memory span for digits. 5. Counts backward. 6. Repeats sentences of different lengths, from memory. 7. Describes pictures. 8. Arranges five weights in order. 9. Compares, e.g., an apple and a cucumber. 10. Defines, e.g., fork, table, cat. 11. Resists suggestions. 12. Copies simple designs. 13. Gives words for three minutes. 14. Arranges three words in sentence. 15. Tells what to do if, e.g., it begins to rain. 16. Draws designs from memory. 17. Sees absurdity in given sentences. 18. Puts given words together to make sentences. 19. Defines, e.g., health, generosity, forgiveness. 20. Completes analogies like: Up is to down as head is to . . .

The number of points which children of different years made ran as follows in a miscellaneous group[7] of subjects:

At age	4–	5–	6–	7–	8–	9–	10–	11–	12–	13–	14–	15–	Adult	
Points	14–	22–	29–	34–	39–	52–	59–	64–	74–	74–	78–	77–	91;	751 persons in all

[6] Yerkes, Bridges, Hardwick, "A Point Scale for Measuring Mental Ability" (1915), 168, esp. 31–48. *Cf. also* Haines, "Point-Scale Ratings of Delinquent Boys, Girls," *Psychol. Rev.*, 22 (1915), 104–109. "Diagnostic Values of some Performance Tests," *Ibid.*, 299–305. "Relative Values of Point-Scale and Year-Scale Measurements of one Thousand Minor Delinquents," *Journ. Exp. Psychol.* 1 (1916), 51–82. "Mental Measurements of the Blind," *Psychol. Monog.*, 89 (1916), 86.

[7] Yerkes, Bridges, Hardwick, *op. cit.*, 64–65.

Recently, Yerkes has been experimenting with a scale for rating corresponding abilities in normal adults. Twenty tests are taken, more difficult than those for the adolescent scale, and graded under more rigid conditions. There is still much division of opinion on the relative merits of *year* and *point* scales. In general, the relative merit of the point-scale concept increases as the abilities of the persons tested become higher.

An essential development in these systems of testing is the "intelligence quotient."[8] A child testing one year behind his age at five years is more backward than a child who tests one year behind his age at ten years. It would not be fair to say that each is one year backward. The "Intelligence Quotient" (or IQ) aims to reduce these values to a common denominator; it may be applied to both year and point scales. By the Yerkes scale, a person of 4.7 years who scored but 11 points (the norm for this age is 21) would thus show an IQ[9] of $^{11}/_{21}$ or .52, which expresses the relation between what the subject has done and what the normal subject should do. Kuhlmann considers that if one's "Binet age" divided by chronological age gives a quotient of .75 or less, this fact always indicates feeblemindedness.[10] In Terman's work this figure is placed nearer .70.[11] It is supposed that the direct influence of age in improving performance ceases at about sixteen years (Terman); to compute the IQ, the scores ("mental age" or number of points) for older persons are divided by the accomplishment appropriate to this age.

[8] *Cf.* Doll, Note on the "Intelligence Quotient," *Training School Bulletin* (Jan. 1916).

[9] The term "coefficient of mental ability" (C. M. A.), has also been used in point-scale work.

[10] *Journal of Psycho-Asthenics*, 19 (1915), 235.

[11] "The Measurement of Intelligence" (1916), 81.

Year-scales have the advantage over point-scales, that they are more adaptable to new tests. A year-scale can be determined for any test in which it exists by simply submitting it to a number of normal individuals at each age. Pintner has done this effectively for the Knox Cube Test;[12] and it is being done for other valuable tests not included in the standardized series. This is, in fact, what standardization now means when applied to psychological tests.

Both "year" and "point" scales consist of a number of different tests. The summary given of the Yerkes adolescent scale indicates their general character. Practical considerations make them simple, with few demands on apparatus. While they are called measures of *intelligence,* no careful protagonist of the methods claims that they measure the whole, or a sufficient part, of the mental qualities involved in adaptation to life. It may be said with assurance that they measure a necessary part, since people who do not measure up to the ability of twelve years, or 75 points, or whose "IQ" is below .70, are likely to have difficulties in meeting the usual conditions of independent life. There is, however, all too positive testimony that good performance in these tests carries no guaranty of adjustment to life. Thus, excellent records have been obtained with long-standing dementia praecox cases. The scales for the functions measured in the intelligence scales are good attests of mental defect, or superiority in particular functions, but uncertain ones for mental normality.

Healy and his co-workers have found considerable difficulty with the earlier Binet tests; and it must be acknowledged that their objections apply in some degree

[12] *Psychol. Rev.* 22 (1915), 377–401.

to " intelligence " measures as a whole.[13] Healy himself emphasizes the more general disadvantage, also brought out in the earlier paper of Schmitt, of their " calling so greatly for language responses." This is unfortunate in two ways, first as ill-suited to the polyglot American population, and second because it unduly favors the " verbalist " type of defective (the *verbomane* of Ossip-Lourié), whose language powers are out of proportion to the rest of his mental constitution. Of such a case Healy remarks:

" Here is a girl with language ability immensely above her standard of performance in other ways. Her record on the Binet tests is not an indication of the extent of her mental defectiveness, because they call for an undue amount of language performance. Much more consonant with her social failure are our findings on other tests." But the Binet record in this case was also far from normal.

Healy therefore has worked along lines independent of the Binet conception, not toward *intelligence* tests, but toward what he calls *performance* tests, and tests of " performance with other material than language." The experimental responses are not made in language, as they would be in a " word-association " test or a " definition " test. They consist in such adaptations as fitting differently shaped pieces of wood in place to fill a frame. (Construction tests.) Irregularly shaped pieces were cut out of a picture mounted on wood, and these must be correctly replaced. A " puzzle box " is opened by some simple mechanical adjustments. But his most distinctive contribution is the pictorial completion test. A high value has long been assigned among mental measurements

[13] Those discussed by Schmitt, are important, if mostly outside the scope of this volume. " Pedagogical Seminary," 19 (1912), 186–200. *Psychol. Monog.*, 83 (1915), esp. pp. 51–67.

to the so-called *Kombinationsmethode* (or *completion test*) of Ebbinghaus, in the best known form of which certain letters or words are left out of a printed text, and the subject supplies them as rapidly as possible. But its dependence on language ability is extreme. Healy's problem was to represent its valuable features outside the language field. He accomplished this by obtaining a picture [14] of a kind to attract the juveniles with whom he has mostly to deal, and cutting ten square pieces out of different parts of it. All pieces are the same size. The subject is then supplied with fifty pieces of this form, ten of which fit logically into the places cut out, while the others are more or less irrelevant. For example, there would be a bat or a tennis racket which might fit into a baseball game. The subject must put into each place the piece which logically fits there. The possible errors are not all of the same degree; it would not be so bad an error to put the tennis racket in place of the bat as to put a book there. Healy says of it: [15]

> At 11 years this test should be readily accomplished with not more than two final errors, and certainly not more than one illogical error. Most of our group of normal offenders by 11 years do better than this, and even some at 10 years do as well. With age there seems to be no marked average increase of ability. The median or average performance for all in the group of those ordinary in ability above 10 years is one final error and no illogical error.

Besides lessening the language difficulty, performance tests of Healy's type are calculated to appeal more to the natural interests of the subject. "The will to coöperate

[14] Reproduced in "The Individual Delinquent" (1915), facing p. 96. *Cf. also* "A Pictorial Completion Test," *Psychol. Rev.* 21 (1914), 189-203.

[15] "The Individual Delinquent," 111.

and put forth the best effort is not going to be brought out in offenders by asking them to memorize nonsense syllables and perform other feats of rote memory." He mentions a case in which "the stimulation of a good meal" raised the Binet findings over two years. Frances Porter brings out these points in an analysis of several cases, in which the performance tests give better information than those of the scales, except among very young children.[16] The subject's attitude toward the "performance" experiments is thought to be more representative of his attitude toward real life, and his reactions are accordingly more representative of his actions in the world at large. On the other hand, Healy's tests are not so fully standardized as the scales, and there is more of the "personal equation" in their interpretation. The experiment becomes less an observation for its own sake than a standard situation, to which the subject's general reaction is significant. This point of view has much to commend it, as the laboratory in general presents a less artificial situation than do the single experimental tasks.

In Knox's testing of immigrants,[17] the language factor must also be obviated. Like Healy, he makes reports of several concrete performance tests, typified by form-boards and construction "puzzles," in which the subject must fit blocks into their correct places on a frame. He also suggests judgments of emotional expressions; and the "ink-blot" test in which one sees what is suggested by the random shapes of the blots; this is intended as a test of the imaginative faculty. His best known contribution is the "Cube" test standardized by Pintner. In it,

[16] "Difficulties in the Interpretation of Mental Tests," *Psychol. Clinic* (1915), 140–158, 167–180. *Cf. also* Bronner, "Attitude as It Affects Performance of Tests," *Psychol. Rev.* (1916), 303–331.

[17] "Alien Mental Defectives," Stoelting, Chicago.

four small cubes are placed before the subject and the experimenter taps them with another cube in an irregular succession. The subject is to repeat, that is, exactly imitate the experimenter's movements. At first simple tapping sequences are made and then more and more difficult sequences, until those are reached which are too complicated for the subject to follow. His efficiency in the test is measured by the degree of complication of sequence that he can follow. Pintner's standardization, with its simplicity and ease of making, gives this test high value; it combines convenience with a significant result.

An inconvenient, but in other ways desirable, feature of the Binet scales is their continual use of different tests for different ages. The kinds of performance that test a child of four or five years are not so suitable for one of ten or twelve years. The Yerkes point-scale too, while scored independently of age, is heterogeneous in make-up. There are advantages in a small range of tests, or even a single test, which would show the step-by-step progress of the individual in the same kind of mental process. Pintner's standardization of the "Cube" test is a step in this direction. So is the *multiple choice* method of Yerkes, which is applicable from the highest human intelligence to the lowest forms of animal life. It involves the ability to select from a number of equally possible reactions a certain correct one, through its relation to the other possible reactions. For example, the *correct* reaction may be to strike the rightmost or leftmost of telegraph keys that are presented. Such a bit of learning lies within the accomplishment of a trained animal. Or the *correct* key might be alternately to right and left from the end, a distance of one plus the highest integer above the square root of the number of the keys. This would

baffle most human attempts. One records the number of unsuccessful trials before solution, as well as the point at which the problem becomes too difficult to solve.

Many tests have played their greatest part in the diagnosis of defects. At least equally important is the development of methods to detect early aptitudes. On the one hand we wish to know whether an individual is defective, and on the other hand, *what* he is best fitted for. Goddard has found fitness for certain grades of work determinable through the Binet scale, which Healy quotes with some reservation. "The feeble-minded individual who grades 6 years, for instance, does tasks of short duration, and washes dishes; the mental defective of 8 years runs errands, does light work, makes beds; the one who grades 10 years is a good institutional helper, does good routine work. . . . Exceedingly interesting, though . . . we should feel it entirely unsafe to give either a prognosis or to suggest treatment by means of it."

Beyond the limits of the subnormal, the problem of mental measurement divides into two main parts. The first is a specialized inquiry whether a certain directly measurable aptitude is present in a person, or what aptitudes he has. This rounds out the scope of "intelligence" testing. The second concerns the complicated questions of "temperamental" qualities, which are more affected by emotional and instinctive factors.

The directly measurable aptitudes that are significant in this connection are those directly useful in making a living. This is the field of vocational psychology. The problem of vocational selection is one of measuring and predicting ability to make specific adaptations. One measures and predicts a person's capacity for meeting particular situations, as those of the telephone switch-

board, or the operation of an industrial machine, or quick computation with figures. Such aptitudes can be directly measured in the laboratory, because the laboratory can reproduce quite closely the actual conditions under which the work is done. Allowance must be made for the fact that the subject's knowledge of the "best" nature of the performance may affect the normality. He may be spurred by unusual effort or confused by nervousness. For example, the writer has reported observations of typewriting in which the performance of two subjects was sometimes measured as a part of a laboratory experiment, and sometimes without their knowledge, in the course of their regular work. The two subjects each wrote about nine-tenths as fast under "actual life" conditions as under laboratory conditions. On the other hand, one subject made five times as many mistakes under the laboratory conditions as under the actual life conditions; the other made only twice as many. If this result be generally valid, a typewriter's speed will be nine-tenths of his laboratory rate, but no laboratory performance is a sufficient index of accuracy in typewriting.

The progress of tests for vocational selection in the kinds of vocation above discussed indicates that the gap between laboratory performance and actual life performance is not an impassable one. The direct measures of motor processes and the simpler intellectual processes here involved give a fair idea of the individual's performance in allied functions in actual life. Whoever can passably operate the model switchboard in the laboratory should learn to operate the real one in the Company's "exchange." [18] Hollingworth describes and discusses

[18] With the reservations pointed out by Hollingworth, "Vocational Psychology," 116-117.

many experimental procedures that are significant in this direction. His book [19] should be the guide of those who are to explore this side of dynamic psychology beyond the limits of the present chapter. It must suffice in this connection to discuss the principles underlying experimentation in the fields of character and temperament, and to describe specific experiments illustrating the points to be considered.

It has already been mentioned that the abilities of the *intelligence* scales are not a complete test of adaptability to life. The same appears true of psychomotor adaptations of the type just discussed. A person may be entirely capable in the functions reached by these experiments, and still for "temperamental" reasons be unable to adjust himself happily. The point is perhaps worth some emphasis, that conspicuous failures of adaptation, as manifested in manic-depressive or dementia praecox cases, are continually to be observed in persons of marked psychomotor aptitudes such as typewriting, tennis, or performance on musical instruments. Indeed, skilled players of chess or "auction-bridge" are to be found throughout hospitals for mental disease. From aptness at "slap-jack" to the mastery of chess, it is doubtful if there is any accomplishment, any "ability," whose possession gives an adequate token of what is called *mental balance*.

The writer has made some quantitative studies that bear on this point. The *choice reactions* of laboratory experiment are adaptations whose fitness is a "convention" of the experiment. It is made, for example, a proper reaction for the subject to tap with his thumb when he sees a figure "1" exposed; with his forefinger

[19] Hollingworth, "Vocational Psychology" (1916). The Conduct of the Mind Series.

to the figure "2," etc. In such experiments subjects make mistakes now and then, just as the wrong key on the typewriter is struck with perfect knowledge of the right key. These "false reactions," as the experimentalist calls them, are failures of adjustment to the situation, just as it is a failure of adjustment for an animal to look for his food in a green compartment when it is being trained to look for it in a red one. Only in the man's case the falseness of the reaction is conventional, while in the animal's it is vital. The idea in the writer's experiments was to devise various choice-reaction methods, and see whether the failure of psychopathic subjects to make a normal adjustment to life was in any way reflected by a corresponding failure to make these conventionalized adaptations as efficiently as the normal person. It would lead far afield to describe apparatus or experiments in detail, but five experimental procedures are involved in them, whose general features are as follows:

Experiment (20). A number consisting of five figures is presented to the subject, one of which is underscored, such as 25413. He is to strike the corresponding one of five telegraph keys.

Experiment (10). A number of five figures is presented to the subject, and he is to strike each one of the five telegraph keys in the order which the number indicates.

Experiment (50). Instead of five figures, a succession of the five vowels is presented, as *o e i u a*. Each vowel is represented by its proper telegraph key, and the subject strikes in order as the succession indicates.

Experiment (110). Simple additions are presented to the subject, sometimes right and sometimes wrong. If the sum is right, he strikes a key at his right hand; if it is wrong, he strikes one at his left hand.

Experiment (100). Simple statements are shown to the subject, which sometimes are correct, and sometimes incorrect. If a statement is correct, he strikes the right-hand key; if incorrect, he strikes the left-hand key.

Each experimental series consists of twenty-five separate observations, and results may be presented for an initial series taken with each of seventeen subjects. Six of these are normal individuals, and eleven pathological. The essential results are the time of the choice-reactions, and the number of mistakes made.

There appears to be no characteristic difference between normal and pathological individuals in these results. But a suggestion is afforded by the relation between the reaction-times in series 110 and series 100. Thus, the pathological subjects know as well as the normal that eight and nine do not make eighteen; they do not know as readily as the normal that horses eat grass. In the pathological records, without regard to diagnosis, the discrimination of true and false statements of natural fact (series 100) takes relatively longer than the discrimination in statements of mathematical fact (series 110). This result suggests a criterion of vital adaptations on the basis of efficiency in the laboratory adaptations of "choice reaction."

Other attempts to analyze temperament and mental balance experimentally go beyond the notions of good and poor performance in these experiments. In the scales, and the tests for vocational guidance, the experimental results are regularly expressed in terms of *how much, how quickly* and *how accurately.* One "passes" a test partly or wholly. In the methods now to be considered, the significance lies not in how much, how quickly or how accurately, i.e., amount; speed; accuracy; but how, *in what manner,* i.e., content and quality. Consider for example a free association-test in which the stimulus word *true* is given. The subject is to respond with the "first word it makes him think of." Subject X responds *blue;*

time, two seconds. Subject Y responds *Leonidas;* time also two seconds. Given in an equal time, *Leonidas* denotes more knowledge and reflection, and could reasonably be assigned a higher ethical value; if we compared the responses by their intrinsic merit, few could fail to regard *Leonidas* as the better. But from many studies of association responses, as we shall later see, it appears that prominence of this type of response often denotes a not well balanced personality.[20]

The association methods, and those involving what is called *measurement by relative position,* have been cited as those best suited to discussion from this angle. Except for a few incidental aids, they make up the present laboratory apparatus of dynamic psychology, as it relates to the higher functions of mental balance. In both "association" and "relative position" methods the results may, and should, denote "better" or "worse" features in the subject's personality. But *to do this best* (quality) is *not* part of the given experimental task, as is the case in most mental tests. The subject is not told what is the proper type of response in the association experiment, and then told to approximate it as closely as he can. The purpose of the experiment is to find how closely he approaches, of his own accord, the proper type of response. It would defeat the purpose to tell him what the correct principle in judging the relative gravity of different offenses was, and then have him rate the offenses in order of gravity. He is asked in what order they seem to come in gravity, and we see how closely this order comes to that of persons having a normal sense of right and wrong.

[20] The precise meaning of mental balance is developed in the next chapter.

To make intelligent use of these experimental methods one must understand the principles on which their special interpretation rests as well as peculiar sources of error in them. If one wishes to measure a person's memory, one gives him experimental material to remember, and sees how well he remembers it. If we wish to know a person's reaction-time we measure with a chronoscope, reading to thousandths of a second, what time it takes him to lift his hand on hearing a given sound. We cannot conceive objective measures like these for a person's kindliness, merit as a psychologist, or literary ability. But it is plain that people differ in these qualities, and that some are more like one another in these respects than are others.

Shakespeare and Milton are more alike in literary merit than either is like Sir William Davenant. They have made great impressions on the minds of men, while their less known colleague has made but a slight one. Measurement by relative position is based upon considering that Milton is a greater poet than Davenant through the fact that he has thus more greatly impressed his fellow men. Again, if Shakespeare is a greater poet than Milton, this simply means that most people who know them both consider him so.

Measurement by relative position consists in systematic comparisons of this kind. Accordingly, to compare the literary merits of Shakespeare, Milton, Donne, Burns, Lyndesay, Crabbe and others, we should have people who know them well rate them in the order of their excellence. If English poets were graded in this way, there would be practical unanimity about the first four, and from there on disagreements would increase. Professor Cattell had ten leading psychologists grade fifty of their

colleagues in this way.[21] It was found that all the ten put the same man at the head, and that disagreement became greater as the lower places in the scale were reached. This leading man was certainly the greatest American psychologist. About his most eminent colleagues there was more uncertainty; but their positions and the certainty with which they belonged in them could be calculated from the ratings assigned them by their fellows.

Estimates were obtained of American men of letters, from twenty persons qualified to judge.[22] The rankings were as follows:

Name	Average Position	Probable Error
Hawthorne	2.5	.21
Poe	2.6	.25
Emerson	2.9	.37
Lowell	4.4	.35
Longfellow	5.1	.25
Irving	5.7	.31
Bryant	7.1	.35
Thoreau	7.9	.37
Holmes	8.1	.21
Cooper	8.4	.33

Ten of Poe's stories were rated as follows by forty women undergraduate students:

Title	Average Position	Probable Error
The Fall of the House of Usher	3.6	.26
The Murders in the Rue Morgue	4.0	.35
Ligeia	4.1	.22
The Purloined Letter	4.6	.53
William Wilson	5.1	.24
The Telltale Heart	5.8	.30
The Cask of Amontillado	6.0	.38
Metzengerstein	6.6	.26
Loss of Breath	7.1	.30
Le Duc de L'Omelette	7.7	.32

It must not be lost sight of, however, that such data as these measure, not Poe's stories themselves, but other

[21] Statistics of American Psychologists," *Am. J. Psychol.* 14 (1903), 310–328.

[22] Wells, "Archives of Psychology," No. 7 (1907), 30.

people's reactions to them. We measure the value of Poe's stories only in so far as we take other people's reactions to them as the criterion of their value.[23] Now to the psychologist it is no great matter whether "Le Duc de L'Omelette" is or is not a better story than "The Murders in the Rue Morgue." But since the normal judgment is tremendously in favor of the latter, it is evidence of abnormal literary judgment to grade "Le Duc de L'Omelette" as superior. Whoever considered Marston a greater poet than Spenser would show an abnormal mental reaction. Thus these measurements indicate the normality of persons' mental reactions. The method is here of greater significance for what it reveals about those who judge them, than for its valuation of the things judged.

This feature of the method — measuring the mental reactions of the graders rather than the things graded — was more prominent in one of the earlier studies, that of F. B. Sumner,[24] than in many which followed it,[25] when interest centered rather on perfecting the method as an instrument. Sumner caused one hundred persons to arrange twenty-five propositions in order of confidence of definite beliefs. Upon some, as whether George Washington ever lived, every one would hold a definite opinion; upon others, as whether there would be frost in New York City September following, few people would hold a definite opinion. Without reproducing Sumner's analyses in detail, the general order of certainty in the beliefs was as follows:

[23] *Cf.* Hollingworth, "Vocational Psychology," 148.
[24] *Psychol. Rev.* 5 (1898), 616–631.
[25] For a comprehensive review, with many original data, *cf.* Hollingworth, "Empirical Studies in Judgment," *Arch. of Psychol.* 29 (1913), 119. (Bibliography.)

	Average Position	Yes	No
1. Do two plus two equal four?	1.7	100	0
2. Are there other human minds besides your own?	3.9	100	0
3. Did George Washington live?	4.1	100	0
4. Am I awake at the present moment, i.e., not merely dreaming?	4.2	100	0
5. Is the earth round?	4.7	95	5
6. Will the sun rise to-morrow?	6.0	100	0
7. Does the present life alone furnish sufficient motives for moral conduct?	9.1	74	26
8. Does the moon's attraction cause the tides?	9.4	97	1
9. Is matter ever created or destroyed?	10.2	86	11
10. Is the evolution of living beings a fact?	10.2	95	5
11. Will poetry always be held in high regard by the most cultivated minds?	12.1	98	2
12. Is the world becoming better?	12.1	96	4
13. Is a man's conduct determined entirely by heredity and the circumstances of his life?	12.1	37	61
14. Will the most honest man you know be honest ten years hence?	13.1	98	0
15. Is the scientific mind as truly creative as the artistic?	13.6	48	52
16. Do any landscape paintings yield so much satisfaction as the finer natural scenes?	13.6	26	71
17. Would a college education be, on the whole, an advantage to the majority of young men?	14.0	73	26
18. Do spirits of the departed ever communicate with living persons? (We refer only to modern times.)	14.9	14	80
19. Would this continent have become as quickly civilized if it had remained colonial?	15.5	11	87
20. Is the protective tariff a wise policy for the United States?	15.6	49	50
21. Will the death penalty for murder always be held justifiable among civilized people?	16.4	33	61
22. Will our Republic endure another hundred years?	16.6	93	5
23. Is there life on other heavenly bodies?	19.8	62	27
24. Will there be frost in New York City September next?	21.8	24	55
25. Is there an even number of persons in New York City?	25.0	0	0

That is, most of the people were surer about two and two making four than about any of the other things. But not every one was surest of it, for then its position would have been 1.0 instead of 1.7. Everybody is least certain about the number of persons in New York City. Whether our nation will last until 1998 appeared somewhat less certain than whether the world was growing

better. Men as a class were more certain than women about the sum of two and two, about the existence of other human minds, about the cause of the tides, as to the advantage of college for young men, and the wisdom of a protective tariff. The results bring out neatly that unanimity in a belief may be quite out of proportion to its certainty. Most people think the world is becoming better, that honesty is permanent, and that the Republic will endure. But their opinions are not so certain as about things showing more disagreement. His subjects disagree much as to whether the present life provides adequate motives for moral conduct, but they are surer of the opinion they do hold.

Such observations are clearly of "mental" reactions in the narrower sense of the term. They do not aim to go beyond telling us how people *think* about their fellow psychologists, about American men of letters, about the existence of life on other planets. For this information to be practically effective, those who hold beliefs should act in some consistent way with what they think, or, more strictly, tell us that they think. That this is not wholly the case is a common observation. It would not so much matter that actions speak louder than words, but they are so apt to say different things. The mechanism of dissociation provides amply for a man's honestly rating Hawthorne as the greatest American writer, and, through unconscious motives, spending most of his time reading Thoreau.

To judge of a subject's personality on the basis of gradings like these, it is necessary to know how far his ideas thus expressed are reflected in his conduct. The existence of people on other planets is not put to any test of action, and we only have the subject's word for the

actuality of his belief. On the other hand, people may be afraid of ghosts, who do not "believe" in them; like the astronomers who rightly predict eclipses, and believe eclipses to result from a dragon's swallowing the sun. There, one belief is expressed in thought, but another in action. Action is the proper test; "Not he that saith unto me, Lord, Lord." The source of error in measurement by relative position is, that it is limited to an expression of the conscious judgment. *This is a basic source of error in the application of all laboratory psychology to actual life.* With examinations like those of the oculist, it is not serious. The lens which seems the best in the oculist's examining room will regularly be the best in practice. In weightier and more personal passages of life, the rôle of the unconscious in determining actions becomes greater. It is necessary, therefore, to see how one's reactions in relative position measurement fit with corresponding reactions in the test of life.

Two kinds of observations with relative position have been made which lie nearer to a test of action than those above mentioned. One concerns the moral sense.

It has long been recognized that offenses differ in their gravity or heinousness, are susceptible, indeed, of quantitative scaling in magnitude —

> "It's wrong to murder babies, little corals for to fleece,
> But sins like these one expiates at half-a-crown apiece."

Moral *sense* is measurable by relative position; moral *conduct* according to one's social adaptations. Does an inferiority in moral conduct show a corresponding inferiority in moral sense?

My former colleague, Dr. G. G. Fernald, drew up a series of ten offenses, and had them rated in order of

gravity by three groups of persons. One group consisted of a hundred reformatory boys and young men,[26] the second, of twelve normal students of a manual training school, the third of "fifteen persons of mature judgment and of some experience with offenders and their offenses." His results were as follows:

	Average Positions		
	Ref. Group	School Group	Adult Group
1. To take two or three apples from another man's orchard	2.69	1.66	1.00
2. To take a cent from a blind man's cup	3.04	3.10	2.73
3. To break windows for fun	4.13	3.25	3.53
4. To throw hot water on a cat or in any other way cause it to suffer needlessly	4.80	4.42	3.80
5. To break into a building to rob it	5.55	5.83	5.60
6. To take money as "Graft" or "Rake-Off" when you are a city or government official	6.01	5.66	5.80
7. To try to kill yourself	6.33	5.58	6.73
8. To get a nice girl into family way and then leave her	6.84	6.75	7.53
9. To set fire to a house with people in it	7.21	9.60	8.60
10. To shoot to kill a man who runs away when you try to rob him	8.33	8.33	9.66

The orders are practically the same in each group. But that means little, because with a large number of cases, as in the reformatory group, great departures from the normal would balance one another. The individual's moral sense is given in the amount of his own personal departure from a standard to which he ought to conform. We may see from Fernald's tables[27] that the most departure from the average occurs in the reformatory group, and the least in the normal adult group. Of the delin-

[26] In passing it may be noted that the natural interest of the reformatory group would lie in the direction of showing their best moral perceptions in the test. They are persons seeking, not to escape judgment on the ground of mental defect, but to regain a normal freedom.

[27] *Am. J. Insanity*, 68 (1912), 547.

quents, eight put suicide in the place normally occupied by taking the penny from the blind man's cup. Seven rate taking apples from a man's orchard in the normal position of suicide. Seven give breaking windows for fun the normal position of seduction and abandonment. None of these ratings is made by the normal adults, and there is but a single instance of one among the normal adolescents. These results show that the deficiency in moral conduct is to some extent reflected in a deficiency of moral sense. They do not inform us how close the correspondence is. Only a much more detailed comparison of the individual's behavior with his judgments could do that.

In the spring of 1913 the writer made this experiment, slightly varied, with a group of ten normal women (nurses). The actual form of words used in the experiment is not given, but its purport is to consider the case of John Smith, aged twenty-two, single, a clerk in a corner grocery. The offenses were to be scaled according to the severity of punishment which he would merit for them. The positions were as follows:

1. Murdering a man who runs away when held up	1.7
2. Seduction and abandonment	2.1
3. Pouring kerosene on dog and setting fire to him	4.4
4. Falsely accusing a fellow employee	4.9
5. Overcharging customer	5.2
6. Housebreaking	5.4
7. Taking nickel from blind man	6.1
8. Setting fire to some one's empty barn	7.5
9. Taking peck of apples from orchard	8.8
10. Ringing false fire alarm	8.9

The subjects in this experiment were selected with regard to their personalities; five being those resembling a certain person A as closely as possible, and five bearing the closest resemblance to a very different person B.

This test was made along with other experiments to see whether such great differences in personality would be reflected in it. They are not. The A and B groups do not tend to grade particular offenses higher or lower. The conscious surface of character reached in these experimental judgments does not include the forces that determine the differences in personality.

In estimating, three years after the experiments, how well these subjects are adjusted, the original A and B groups are divided as follows: 1-A, 2-A, 3-A, 4-A, 5-B, 6-A, 7-B, 8-B, 9-B, 10-B. Superiority of the A group over the B is well established. Yet those of the B group are nearer the average standard in moral *perception*. This is further evidence that features making for a "normal" judgment are not essentially effective in determining mental balance.

This point is also brought out in some findings of Haines.[28] He reports analogous tests with four groups of women, in which the results are as follows:

	Average Positions			
	Normal		Delinquent	
	14 1st Yr. High Sch.	26 No Defect	16 Doubtf. Intell. Def.	21 High Grade Def.
1. Not to go to Sunday School and church and never to read your Bible	1.5	4.5	7.5	7.5
2. To put poison in the food of someone whom you dislike	2.4	1.9	2.4	1.9
3. To spend the night in a hotel with some young man	3.5[29]	2.7	1.8	2.5
4. To tell a wicked lie about some girl	4.5	6.1	5.7	5.7
5. To flirt with a nice young man on the street	5.5	8.5	8.5	7.2

[28] "Diagnostic Values of some Performance Tests," *Psychol. Rev.* 22 (1915), 303–304.

[29] Haines considers that this is low because of failure to understand what is meant.

	Average Positions			
	Normal		Delinquent	
	14 1st Yr. High Sch.	26 No Defect	16 Doubtf. Intell. Def.	21 High Grade Def.
6. To take a box of candy from the store where you work	5.5	5.3	5.3	5.7
7. To take a hair ribbon from your employer when she knows nothing of it	5.7	5.8	6.2	5.9
8. To get mad and break the dishes when the woman for whom you work finds fault with you	8.5	8.6	8.2	7.5
9. To throw scalding water on the cat	9.1	7.5	7.4	7.5
10. To spank the baby because you are out of patience	9.3	8.1	8.7	7.3

The orders vary more here than in the groups reported by Fernald, and the steps between the offenses are not so great. Considerable discrepancies between moral perception and moral conduct appear. It is not probable that the ratings of the high school girls correspond with their actual standards of conduct. These are determined by forces that do not gain expression in the experiment. Haines' results indeed would make moral *sense* nearly useless for the estimate of standards of conduct. G. G. Fernald, however, puts it among his "tests retained," and Healy looks on it not without favor when the language difficulty is obviated through pictures. His criticisms are pertinent: "For instance, the killing of a moose may be looked at from the standpoint of a hungry woodsman, of a game warden, or of a nature lover like Thoreau." The most these experiments can do is to reflect the conscious, which does not search the fundamental springs of action.

A closer comparison of relative position measurement with the test of action has been made in the study of advertising material. If one can tell by preliminary relative position measurements what advertising copy is best,

much saving of advertising expense results. To measure by relative position the quality of an advertisement, one takes a number of advertisements, of a popular soap, for example, and causes subjects to rate them in the order in which the advertisements would cause them to buy the soap. One could not, of course, measure how closely this represented the real order in which the advertisements would induce these subjects to buy the soap. It remained to compare the advertisements by the amount of business they produced. Both Hollingworth and E. K. Strong have made comparisons of this nature, which indicate that the order in which the subjects think they would respond to the advertisements in the experiments shows a distinct correspondence with the order in which the public responds by buying. But the correspondence is not complete. What are the influences that disturb it? First, there are many factors, familiar to the business expert, which make it hard to gauge the volume of business produced by a definite advertisement. Second, those who rate the advertisements may not be fair representatives of the buying public. While these objections are practically important, neither invalidates the method. On the one hand, there are ways of advertising and selling that give quite accurate returns; on the other, a wise selection of graders obviates the difficulty. Third, the factors which make us rate an advertisement first in persuasiveness may not be the ones that really make us buy. The more we eliminate the other two difficulties, the nearer we approach to measuring this fundamental one. The fairest test of the method is under conditions where sales or inquiries can most certainly be referred to definite advertising material. Where the purchaser may have seen a dozen different advertisements of the same product, and may

buy it in any number of different stores, this is next to impossible. Only where appeal and response are on the "direct by mail" plan, are advertisements capable of the most accurate testing. Then we know best what appeals have been made and what responses received to each. A practical illustration of this is shown in a business house sending out sales letters to a mailing list of some 20,000 names. They will first try out different sales letters with a smaller group of names. A letter must yield adequate results in this testing before being sent to the larger list. It has been said that a testing list of 500 names is sufficient for the purposes involved.

Adams[30] has compared the relative position merit of advertisements with the number of inquiries they produce. The advertising itself appears not to have been "direct by mail," but of the magazine type. The number of graders was 161. As the test in action was, here, the number of inquiries, not the number of sales, it was fitting that the laboratory test should also be of persuasiveness toward answering the advertisement rather than toward buying the goods. Three sets of advertisements were used. For the set showing the clearest differences in merit there was a corresponding difference in the number of inquiries produced. In one of the remaining two sets a fairly reliable order of laboratory merit was obtained. In the other, the graders disagreed a good deal. These latter two arrangements both showed a negative relation to the number of replies; that is, the advertisements thought to be better did not bring so many answers. The most interesting discrepancy of the laboratory and

[30] "The Adequacy of the Laboratory Test in Advertising," *Psychol. Rev.* 22 (1915), 402–422. Adams' more extensive work, "Advertising and Its Mental Laws" (Macmillan), appears as this volume is in press.

the action tests concerns two advertisements in different sets, of which one covered the full page with a return-coupon, and the other was identically worded, but covered a half-page with no return-coupon. Each of these advertisements was ranked by the graders the poorest of its group. That is, the return-coupon did not alter the position of the advertisements in the laboratory test. In the action test, the advertisement having the return-coupon was the best of its group, not only in number of inquiries, but in cost per inquiry and in profit. Its half-page replica without the return-coupon was the worst of its group in number of inquiries and in cost per inquiry and next to worst in profit. The return-coupon appealed to motives most effective for action, but which did not come to the surface in the laboratory test.

At its best, a " relative position " experiment tells us as much as self-examination reveals about men's principles and probable conduct. This is somewhat in accord with actual conduct, but not wholly so. Important trends of conduct are not in consciousness and do not appear to self-examination. They produce apparent discrepancies and inconsistencies between thought and conduct. By comparing its results with the test of action, we observe how important such unconscious forces are in the persons we study. For the return-coupon advertisement, they were very important.

The " association " experiments have little in common with " relative position " measurements, except for sharing with them a primacy among measures of the higher mental adjustments. Association experiments are practically confined to language material, and depend on normal ability in the use of language. They measure the language reactions of the subject under more or less stand-

ardized conditions. A "stimulus"-word may be spoken to the subject, and he is to respond as soon as possible by speaking a word that stands in a certain relation to it. In one type of experiment, the response is to be the opposite of the stimulus-word, like *white, black.* In another, the stimulus-word is a verb, and the response must fit an object to it, like *pull, wagon.* Various relations of this sort can be used.[31] They are called *controlled* association tests, because the relation of the response to the stimulus-word is quite restricted. The "opposites" test, which is the easiest, has found special use in tests of intelligence, as this function is reflected in one's ability with language.

Another, and for the present purpose more significant, type of association experiments, is called the *free* association test.[32] Here the subject is instructed, in effect, to respond with the first word suggested by the stimulus-word. One is soon struck by the fact that this takes longer than when the response is more restricted. It takes less time to give the opposite of *slow* than to give the first thing it suggests. Because so many responses might fit the experiment, there is more rivalry between them and they block one another. In general, the time is longer for women than for men. A normal time of free association response is about two seconds; knowledge of the speed of mental processes testifies that this is a liberal allowance. Sometimes the free association time is as much as five or ten seconds and more. In such cases it is clear that mental blocking has taken place. Perhaps

[31] For a review of them, *cf.* "Association Tests," *Psychol. Monog.* 57 (1911), 85.

[32] Haggerty and Kempf have made an interesting use of controlled association tests in functions more usually assigned to the free association test. *Am. J. Psychol.* 24 (1913), 414-425.

the ideas coming up have been such as the subject does not wish to express.

This experiment has, in fact, become most popularly known as a possible means for the detection of wrong-doers, but research has not wholly encouraged this interpretation.[33]

While it hardly gives an objective method for establishing guilty knowledge, it yields striking information about the trends of thought in the mind. The arousal of an emotionally colored trend in the association experiment has been found to be accompanied by more, or fewer, of numerous symptoms, the following enumeration of which is adapted from Pfister:[34]

A. EXTERNAL.

1. Bodily manifestations: Clearing throat, stammering, gesture before or after the response, twitching, tears, sighing, psychogalvanic reflex,[35] pulse change, etc.
2. Immediate correction of the response, after utterance or at its beginning.
3. Lengthened reaction time, i.e., reaction times above the subject's median (not average) time for the series. (This is rather too wide.)

B. INTERNAL.

1. Misunderstanding of the stimulus-word.
2. A response consisting of:
   - (a) Naming an object in sight, as *window*.
   - (b) Translations into a foreign language.
   - (c) Repetition of the stimulus-word.
   - (d) Minor change of the stimulus-word; as, *sick, sickly*.
   - (e) Sound associations, as rhymes.
   - (f) Stilted reactions.
   - (g) "Perseverations"; the response is relevant not to the immediate stimulus-word, but to one already given.

[33] *Cf.* the comprehensive review of Rittershaus, "Die Komplexforschung," *Journ. f. Psych. u. Neurol.* 15 (1910), 61–83, 184–220; 16 (1910), 1–43. (Bibliography.) Also, "Zur Frage der Komplexforschung," *Arch. f. d. Ges. Psychol.* 28 (1913), 324–335, and Crane, "A Study in Association and Reaction Time," *Psychol. Monog.* 80 (1915), 61.

[34] *D. psa. Met.*, 285–286.

[35] (a) A change in the relative potential of different parts of the body; (b) a diminution of resistance in the body, ensuing upon a stimulus that arouses a special emotional reaction.

(h) "Failure of reproduction"; the subject cannot, after the series is completed, remember the response to a given stimulus-word, or gives some other without trying to remember.

These are called "complex indicators" by those who formulated them. No one of them is a certain or essential symptom, and little significance in this respect should attach to any association accompanied by less than two[36] which are functionally independent.

The more of these symptoms an individual shows in an association record, the greater the indications of unbalanced affect in the personality. But these observations have been used more to bring out the existence of certain special emotional "complexes" in patients than for a general diagnosis of mental balance. The most important observations on this point deal with a feature of the response-words. There is a class of responses called the predicate or egocentric type of responses. The *true-Leonidas* above cited is an example of them.[37] In normal persons, from 15 to 45 per cent of associative responses belong to this group. Single series have been taken with as low as 2 per cent and as high as 60 per cent; but the number of these is a fairly constant attribute of the individual.[38] The number of these "egocentric" associations has been thought, with reason, to bear a peculiar relation to the subject's general personality. It has not yet been formulated quite acceptably. Says Jung:

According to my experience, this association type is important for the diagnosis of an inadequate transference

[36] *Cf.* Dooley, "Correlation of Normal Complexes," *Am. J. Psychol.* 27 (1916), esp. 131–139.

[37] For a full definition of the category, *cf. Psychol. Rev.* 18 (1911), 229–233.

[38] "The Question of Association Types," *Psychol. Rev.* 19 (1912), 253–270.

of affect to the sexual object. The personality of this type projects, in an evident manner, a tremendous amount of affect upon the outer world, and he shows these feelings in the unadmitted, but none the less transparent, endeavor to awaken a sympathetic feeling in the experimenter. . . . *Jahrb. f. psa. u. psp. Forsch.* (1909), 157.

And Ferenczi:

The healthy person answers promptly, with a logically or phonetically associated response. But with the neurotic, the unbalanced affects take possession of the stimulus-word, and seek to exploit it in their own sense. . . . It is not the stimulus-words which arouse the affectful reaction, but the hungry affects of the neurotic come to meet it. The neurotic, so to speak, "introjects" the stimulus-words. "Introjektion u. Uebertragung," *Jahrb. f. psa. u. psp. Forsch.* (1909), 432.

According to Pfister:

If a subject makes considerable use of adjectives with a value content (characteristic of egocentric association-type), he informs us that there is a large amount of "floating" unbalanced energy; that he is not well adapted in his instinctive life. *D. psa. Met.*, 280.

If these views are justified, the egocentric reactions are an important criterion of mental adjustment. This is abundantly attested in certain persons. On the other hand, there are certain things that should follow, which do not.[39] Even if we state it more broadly, that the egocentric reaction type indicates special lack of balance somewhere in the instinctive life, there is a body of facts which is not covered. It will be best to examine a cross-section of the evidence, and observe the manner in which this interpretation of the association test applies within the limits of its use.

[39] Notably in cases of mental disease.

The A and B groups mentioned in connection with the experiments on moral perception (pp. 253–254) also underwent an association test using the word list prepared by Kent and Rosanoff. Arranged in the order of egocentric responses which they gave, the A and B groups ran: 1, 52%, A; 2, 44%, B; 3, 42%, A; 4, 42%, A; 5, 41%, B; 6, 32%, A; 7, 32%, A; 8, 26%, B; 9, 19%, B; 10, 9%, B. The persons A and B themselves, who were the prototypes by which the above groups were selected, showed in more extensive experiments 47% and 17% of egocentric reactions respectively.

The investigator was but little acquainted with any of these subjects, with the exception of A and B themselves. He did not know till after the experiments had been evaluated who were supposed to resemble A or B. They were selected for him by a person of mature judgment, not a psychologist, but who best combined the qualifications necessary to make such a selection. It was supposed to be simply on the basis of temperamental resemblance to A or B. At the time of the experiment, the investigator made in eight cases a note of the group to which each one seemed to belong. His judgment agreed in seven of these eight cases with that of the person who had selected them. In one case there was disagreement. In one of the remaining two no judgment by the writer is recorded.

A case only doubtfully assigned by the writer is No. 2 above. He finds her to "resemble A more than No. 7 does," without being clearly put in either group. Her associations, with 44% of egocentrics, are characteristic of the A group, but she was selected as a B. This led to the question whether, since human personality is such a compound thing, she might not have qualities which would

produce an A reaction type together with others that had caused the selector to put her in the B group. Further inquiry develops that this personality is indeed not well adjusted; laughs and cries with abnormal readiness; fails to carry out the instructions of her work; seems to be always in a dreamland. This fully entitles her to the high egocentricity of her responses, on the hypothesis that many egocentric responses reflect a lack of balance in the affective life.

No. 5 above, rated as B, shows more egocentric responses than characterize a B personality. When inquiry develops that she is of unhappy disposition, making almost no friends, discontented and blue, this case must also be regarded as consistent with the hypothesis that egocentric responses mean unbalanced affects. Though selected as B personalities, these persons possess the characteristics that produce an A reaction to the association test.

The five selections to the A group, Nos. 1, 3, 4, 6, and 7, show a number of egocentric reactions well above the average of a larger number of unselected subjects. Their average would be not quite twice as many. They have been uniformly better in their profession than the members of the B group. Below are given in parallel column certain incidental notes which were taken during the experiments, for the A and B groups. They give the best characterizations for comparing the A personalities with the B.

A Group	B Group
(m) Manner subdued, but co-operates with exceptional readiness and efficiency. Asks questions indicating some idea of different (moral) standards, the	(q) Shyness at start. Less poise than subject *m*, who was tested just before her. Takes much instruction. Fidgets as stimulus-words are given. If educated

judgment is on personal opinion of heinousness; of possible consequence of so doing.

(n) Is more subdued than above. Blames self for not understanding part of test at first. Fidgets a good deal when blocked (in association test). Asks about standards in moral test.

(p) Catches on very well. Subdued. Clears throat much in association test, starts to speak, changes to another word. Spontaneously assembles certain cards used in assistance to examiner.

would regard as A, but being uneducated, as B (in agreement with selector).

(r) Shakes hands with an assured smile. Talks more than others, but in association test has difficulties when "nothing comes," at which times she does *not* get stirred up or fidget especially. Does not seem so bashful as *m* and *n*, who were tested before her.

(s) Is assured at first, less so later, then again more spontaneous. Is quiet, not making unnecessary remarks. Does not rearrange cards as *p* did. Incline to B group, but would be very doubtful but for the observation of results involved in recording them.

The general results are consistent with the view that the egocentric association type indicates a greater "loading" of the experiment with affect; and, as the affect is there to be loaded, it is evidently not taken care of elsewhere in the personality. The experiment becomes a token of the amount of this "free-floating" affect. It does not indicate whether the person's general reaction to it is good, as it is with the A group in general, or inferior, as it is with Nos. 2 and 5 above.

Jung considers this free-floating affect to be of an erotic nature, detached from the sexual object where it properly belongs, so that the sexual object is insufficiently "loaded" with it. If this is the case, we should expect sexual adaptations to be more difficult in the A group than in the B. In fact, of the subjects assigned by the writer to the A group, not one has married (July, 1916). Their prototype, A, herself remains unmarried. Of the

subjects apparently belonging to the B group, four out of five have since married. Their prototype, B, is also married.

There are no physical differences between the groups consistent with this fact. But the most noticeable social difference between the A and B groups is that the latter are much more open in their attitude toward the opposite sex. The A group are more repressed in this direction. The natural inference is to regard their greater professional efficiency as due to a "loading" of their work with affect normally attached to the erotic sphere. Since their work is useful, and represents a good type of affective transference, it belongs to the type defined in Chapter IV as *sublimation.* In the B type, whose eroticism is freer, this transference, or sublimation, does not take place; they lack this access of energy for their work and so are less efficient in it.[40]

In connection with these tests there was developed a system for recording the data on the personality. It has been shown at different times that personal traits are measurable by relative position. That is, if several persons independently grade some one in respect to his intellectual ability, coöperativeness, cheerfulness, etc., there is fairly close agreement among them as to how much of these traits he possesses.[41] It is necessary to have an inclusive view of the personality, since traits may mean dif-

[40] For further references on the association test and personality, *cf. Psychol. Bul.* 13 (1916), 146. Also Moore, "A Method of Testing the Strength of Instincts," *Am. J. Psychol.* 27 (1916), 226–233.

[41] The first published study seems to be that of Norsworthy, "Validity of Judgments of Character," *Essays in Honor of William James* (1908), 553–567. Much additional material is now available in Hollingworth, "Vocational Psychology" (1916), esp. Chs. II, VI and VII.

ferent things to the personality according to the setting in which they occur. Kindliness, for example, in social relations, or to animals, may be fundamental, or compensatory to unbalanced love-life (*cf.* Ch. IV, p. 116). The series of traits finally evolved is given below. The necessity for adapting it to "relative position" treatment often excluded questions that require topical answers. But topical information is altogether essential to an intelligent grading of these traits. The series aims to be so inclusive that, if its ground is reliably covered, one has a complete idea of how the individual attempts to adjust himself to life, and how well he succeeds in doing so. It should acquaint us with the character of his mental balance, and its weaknesses, and we should be in a position to advise what are the best courses to remedy them. The usual data in regard to age, occupation, etc., are of course assumed. About 90 topics of inquiry are included, divided into 14 sections as follows:[42]

I. Intellectual Processes

1. Ease of learning
2. Goodness of memory
3. Fund of information
4. Goodness of observation
5. Vividness of mental imagery

II. Output of Energy

6. How much motor activity
7. Talkativeness
8. Skill with tools, needlework, etc.
9. Bodily dexterity and grace

[42] Their statement is much abbreviated here. They are more fully presented and explained in "The Systematic Observation of the Personality — in its Relation to the Hygiene of Mind," *Psychol. Rev.* 21 (1914), 295–332. *Cf. also* Hoch and Amsden, "A Guide to the Descriptive Study of the Personality," *Rev. of Neurol. and Psychiat.* 11 (1913), 577–587.

III. Self-assertion

10. Effort to shape surroundings
11. Independence of the opinion of others
12. Tendency to assume leadership
13. Extent of material ambitions
14. Bearing up under difficulties and misfortunes
15. Ability to face crises
16. Inclination to face danger

IV. Adaptability

17. Getting along with children
18. Getting along with people in older years (tactfulness)
19. Conformable to discipline
20. Tendency to be guided by advice
21. Resourcefulness

V. General Habits of Work

22. Promptness in meeting situations
23. Tendency to system in work
24. Executive tendencies (leader or follower)
25. Persistence
26. Punctuality

VI. Moral Sphere

27. Keeping of word
28. Truthfulness in matters of present or past
29. Trustworthiness in money matters
30. Conscientiousness in performance of duty
31. Discretion with the reputation of others
32. Mindful of the equal rights of others

VII. Recreative Activities

33. Sports of quick and continuous activity
34. Less active sports
35. Hunting or fishing
36. Camp life in general
37. Games of intellectual character
38. Mental games of less intellectual character
39. Gambling or wagers
40. Alcohol
41. Tobacco

42. Other drugs
43. Reading
44. Music
45. Pictures
46. Artistic creations
47. Delicacies in eating or drinking
48. Sports involving physical danger

VIII. General Cast of Mood

49. Cheerfulness
50. Stability
51. Depth

IX. Attitude Toward Self

52. Self-consciousness
53. Conceit
54. Patience, capacity to "endure to the end"
55. Demand for self-justification

X. Attitude Toward Others

56. Sympathy
57. Generosity
58. Criticism
59. Jealousy
60. Sensitiveness
61. Capacity to forgive
62. Ability to judge others

XI. Reactions to Attitude Toward Self and Others

63. Care of personal appearance
64. Sociability.
65. Social forwardness
66. Demonstrative of emotion
67. Tendency to "unburden"
68. Demand for sympathy
69. Inclination to self-pity
70. Pleasure in success or enjoyment of others
71. "Good loser"
72. Given to witticisms, epigrams, etc.
73. Tendency to emphasize the good side of the environment
74. Evenness of nature (temper)

XII. Position Toward Reality

75. Capacity to take things as they are
76. Acknowledgment of mistakes or transgressions
77. Practical
78. Influenced in action by likes and dislikes
79. Daydreaming

XIII. Sexual Sphere

80. Forwardness toward the opposite sex
81. Freedom of discussing own relation to question, with intimates
82. Sexual intercourse
83. Flirtation, love affairs, "spooning," etc.
84. Sexual trends in reading, art, conversation
85. Masturbation and allied practices, sexual imagination
86. Negativistic reactions (prudishness)
87. What degree of contentment with existing sexual adjustments
88. Dominant partner in sexual relationships

XIV. Balancing Factors

(This conception of balancing factors is narrower than that of the last chapter in this volume. *Cf.* pp. 274–275.)

89. How firm in religious beliefs
90. Active in church work
91. Intense interest or fads other than already dealt with
92. Expressions of ideals
93. Their harmony with actual conduct
94. How adequate a balance is the final result of these means

There is little advantage in regarding such a series as a fixed quantity. Traits should be taken from or added to it according to the purposes it is to serve. It was arranged for studies in connection with the association experiment, and to give a general survey of mental balance. Other purposes, like those of vocational selection, would call for special modifications. We are not interested in the same series of traits for a teacher as for an advertising expert. Valuable or disadvantageous traits

to the advertising expert would not have the same significance for the teacher.

The logical purpose of experimental work in the directions discussed is to provide wholly objective bases for judgment of a person's mental equipment, balance, and fitness for certain kinds of work. The closest approach to this end has been made in the measures of intelligence, with their "year" and "point" scales. But the intelligence scales are not, as their authors caution us, automatic machines with which one performs certain operations and receives a statement of mental age. The methods of experimental psychology are colors and brushes with which only the good artist paints a good picture. An inferior picture is less likely to result from bad colors and brushes than from the artist's lack of skill. Many can mix colors well enough; it takes the artist to apply their mixture with his brains. With all the work of the association test, how little was seen of its important meanings before the genius of Jung threw them on the canvas! Cattell, Courtis, Healy, Hollingworth, Jung, Scott, Strong, Terman, Thorndike, Woolley, Yerkes and their fellows all do their utmost to improve the paints and brushes by which they and their fellows can paint the thing as they see it more like what it is. But the beginner must understand as well, that it is not upon the tubes and brushes of experiments alone that success depends, but also on abilities partly native, partly of experience, which are not to be formulated and not wholly conscious. "I lent you my fiddle, but not my fiddlestick," said Walton to his less expert fellow angler. The devising of psychological methods is a science; but their use is, and may always remain, an art. They give us more or less of the story, which is not to be completed from the laboratory

nor from books. It comes from those flowerings of the unconscious that we call intuition. Art is the unconscious of science.

These considerations apply to simpler mental measurements like the intelligence scales; they apply much more to the experiments of vocational bearing, including the "relative position" and "association" methods. Experiments of this type, with standardized observations of non-experimental behavior, are the chief reliance for dealing with those questions of "temperamental" fitness whose import increases, one might say, as the square of a man's rise in the outer world. Better reasons can now be given for regarding a boy John as defective, than for saying that James will do best as a teacher, lawyer, or business man. Diagnosis of the lower and more universally necessary mental traits has for the moment outstripped that of the higher and more complicated vocational aptitudes. But to these belongs a richer future, in which applied science of mind orders the Utopia with a place for every man, and every man in his place.

CHAPTER VIII

BALANCING FACTORS

One of the important parts of a steam or gasoline engine is a flywheel, whose purpose is to absorb energy transmitted from the cylinder, and keep the machine moving at the most favorable rate. Were it not there, the machine would race and tear itself to pieces. If it is too light, it will not absorb the energy properly. The machine will still run too fast, and there will be excessive vibration, which is waste of energy. In some gasoline motors, the cylinders themselves are made to revolve, and serve also the purpose of a flywheel. In the electric motor, which we may accept as our symbol of vital activity, the purpose of the flywheel is similarly supplied by the weight and resistance of the revolving armature. The weight of the flywheel and armature makes them "balancing" factors in the operation of the machines. In a timepiece, this mechanism is called the "balance wheel."

In order that a mental mechanism may operate properly it also must be rightly "balanced." An electric motor is not properly balanced if its resistance is so high that it will not take care of the current it needs for best speed; the analogy would be a too heavy flywheel on a steam engine. It will not "race" but rather refuse to run, and the energy of the current will be wasted in heat. Let the operation of such a machine represent the

performance of some vital task, of the love-life, for example. There is available a certain amount of energy for its operation. The external conditions to which this adaptation is to be made, are represented by the motor itself. "Perfect marriage" is literally with a partner whom one can love as far as desire extends. Figuratively it is the running of a motor whose resistance is not too high to take all the current available for it, nor yet so low that it takes more current than the dynamo is prepared to furnish, so that passion "burns out" at once. Now suppose that one partner is disappointed or dissatisfied in the other. Then there is too much resistance between them for the current of the love-life to be properly taken up in the marriage. Waste of energy, if not damage, results unless this superfluous energy is in some other way taken care of or "balanced." A woman may find such a balancing factor in religion. Mental adaptation is given in a proper balance between vital energy and the mechanisms at hand to take it up. In a narrower sense than here used, "balancing factors" has been a name for those mental operations which take up vital energy not spent in the service of the fundamental trends. In that sense, normal marriage would not be conceived as a balancing factor. But if one is unhappily married, and manages to compensate for that unhappiness by interest in religion, then religion would meet the idea of a balancing factor, in restoring the balance of life by taking up energy which the love-life proper has failed to absorb. Our conception is that all trends, fundamental and otherwise, "balance" the output of vital energy, and are thus balancing factors.

Picture John's mental organism as a factory in which vital energy, as if it were electric current, is being ex-

pended for mental trends, as if it were operating electric motors. It is their function to take up and use all the energy which the power plant supplies. When they do this John's mental organism is well adjusted. These motors are numberless, and of many different kinds. In the foreground is perhaps the largest of them all, and the most continually in operation; it represents the love-life. If it were absent, probably all the other machines one might install would hardly suffice to make good use of the energy thus left free. As John is much interested in mathematics (by teaching of which he supports himself and family), a large motor takes care of this scientific trend. He is also an ardent fisherman, and for some weeks in the year, the scientific motor is shut down, while the piscatorial one takes the energy that went to operate it. If it were unavailable, vacations would be dreary wastes. His minor interest in politics would not balance it, for that motor will not take much current. Similarly all his activities are like machines that require more or less current for their operation according to their importance for his mental poise. If one refuses to work, he can to some degree balance the free energy by turning it into another. As was pointed out in Chapter II, it can be turned to a useful or a wasteful trend. Trends *consistent* with fundamental strivings are useful, others wasteful. John's fishing is useful, because it improves his health, and makes him better able to work. An alcoholic trend would be wasteful, as inconsistent with the functions of a father and provider.

But no motor will run long upon current alone. If it is not supplied with oil, it will heat and stop. In life, the lubricating function of money to the social machinery is well known. It plays an equally essential part in the

smootn operation of one's mental trends. As long as a motor will run without oil, so long can one live on love without paying bills. John's fishing trend could not operate without the lubrication of traveling expenses. A most necessary piece of machinery therefore, is that which supplies the pecuniary lubrication needed for the trends that are to operate. In the case of John, who teaches mathematics for a living, it is that mental mechanism which supplies pecuniary lubrication to the trends of his love-life, to his fondness for sport, and to his interest in politics. Not one of these could run without it, and if there is not enough to supply all, the less essential ones are shut down. Jewels and foreign travel are far greater oil-eaters than tennis or the classics. A profound interest is apt to require more of it than a superficial one.

Machinery may be over-oiled; we may observe those whose money is a burden rather than a source of happiness. If one's interests are narrow, with few and small trends to operate, and one does not understand how to install others, then the mental machinery may become over-oiled with money. A day laborer of sixty years or a dissolute spendthrift who inherited a million dollars might find himself in such a case; but the mathematician, John, should have no such difficulty. He would build a better house for his family, provide servants to give himself and his wife more time for their children or for cultural interests. If possible, they would rear a larger number of children, and provide them with the best companions and schooling to live usefully. He would take more attractive fishing trips, and assume a more conspicuous rôle in politics. Thus he could well and fully occupy his new fortune. His abundant energies would enable

him to take care of the broader interests which such an access of wealth makes imperative to well balanced life.

If he were unhappily married, he could provide greater isolation, perhaps separate establishments for himself and his wife. Cultivating independent interests then restores a measure of balance to their existence impossible in their dependence on each other.

To sum up these introductory remarks: mental adaptation is the balance of the supply of vital energy with its expenditure. Different trends require different amounts of energy for their operation, and are fitted to take care of different amounts of it. Lack of balance results from the direction of more, or less, energy to certain trends, than they are fitted to take care of. One way to restore the balance is to take away the superfluous energy and direct it to other trends, as when an unmarried or unhappily married woman interests herself in religion. Another way to restore the balance would be to reconstruct the marital relationship so that this trend would take the amount of energy one would naturally bestow upon it. We shall meet these examples below in more detail. A narrower conception of balancing factors is represented in the first instance, where another trend takes up the excess of energy obstructed in its fundamental course. Money contributes essentially to the operation of all balancing factors, as oil to machinery.

We cannot expect to maintain this discussion of mental processes upon the simple analogy of an electrical machine. It has not represented the important fact that some kinds of balancing factors are consistent and some inconsistent with fundamental trends and with one another. If they are inconsistent, mental conflicts arise,

and balance is disturbed no matter how their energy is distributed. Just as one does not mix incompatibles in a pharmaceutical prescription, so certain trends, in themselves proper, do not operate well together. Thus failure to mix requires discussion.

In preceding chapters we described certain chief features of mental activity; dissociation, regression, affective transference, symbolism. The treatment dealt more with their rôle in mental pathology than in healthily balanced adjustments. They have a more constructive part to play in this concluding chapter of our studies.

The discussion can be made more practical if we begin by defining as precisely as possible the meaning of adaptation to life under the given conditions; this aspect of the inquiry has not been followed far beyond the first chapter. We take as working hypotheses, first, that men achieve adaptation to life, in proportion to their happiness in it; second, that happiness consists in the balanced expenditure of energy for the realization of desires; (Heaven was called by the Hindus *Kamadhuk,* the realm of the fulfillment of wishes). And third, that the underlying motive in voluntary human conduct is the pursuit of a conscious happiness.

It is also fair to suppose that, in the countless ages of its existence, humanity has come to "know what it wants," that is, the things in which one normally seeks happiness are the things which, if obtained, are best calculated to bring happiness. The first task is then to examine the ways in which men seek happiness; and second, the parts which different mental mechanisms play in the following of these ways.

Certain simple and basal needs are to be eliminated from the discussion. Men deprived of air or water are

very unhappy, but they are also very short-lived, and competition for meeting these needs does not form a regular part of the struggle for existence in the mass of humanity.

There are two general classes into which men's strivings for happiness fall. They were symbolized in the parable of the good and faithful servants. They put their talents to external use, while another hid his in the earth. Each was satisfied with what he had done. In like manner do men put part of their energies to external use. They spend them on their families or on society. Another part of men's energies is spent for more personal, egoistic satisfactions, like sense-pleasures, and fads of intellect or sport. All of us put some of our energies out at interest, and hide some part of them in the earth. The stuporous catatonic has them all hidden there.

Below the human world the two great satisfactions of hunger and love are practically met in the organic possession of food and of the opposite sex. In civilized life our search for food, shelter and warmth is first for money with which to buy them. This search is expressed in the greatest variety of human ways to make a living. Sexual partners are no longer approached with cave-man directness, sometimes even not at all. The satisfactions normally obtained in them are sought through affective symbols or "sublimations" of them.

In human strivings for happiness these two great trends of hunger and love are represented in every variety of "selfish" and "unselfish" aspect. We have met in masturbation with a most self-centered form of erotic trend. Satisfaction is far more often sought here than found. There are few instances in which a permanent and fairly successful adaptation on this level appears.

The vast majority of individuals progress beyond it to the opposite sex.

Jung regards the heterosexual trend as the chief force to free us from regression into the leading strings of childhood. Man may not leave father and mother except to cleave unto his wife. Only the first step in this direction is denoted in the free incidental relationships of prostitution. This must be considered to have a number of grades, from a simple masturbation *per vaginam,* through increasing degrees of affection and personal response between its objects. Gradually organic satisfactions blend with mental ones, and the relationship therewith becomes more permanent and exclusive. A relationship of this level is unquestionably sufficient, if not best suited to the love-life of some natures. In communities whose *mores* are set against such relationships, a compromise may be attempted in childless marriage.

The prostitute type of adjustment does not long balance the love-life of the normal individual. It becomes, if, indeed, it is not always, a regressive or shirking reaction to the adult love-life. "Many a young man," remarks Campbell, "thinks it is the natural thing to indulge his sexual instinct with prostitutes and others, not realizing that in gratifying an instinct that is one part of his nature, he is proving false to ethical cravings which are just as essential and just as healthy a part of his nature." This, Jung considers, is the conflict that produces the neurotic *Don Juan.*

The frequency with which sexual intercourse is established by men before marriage is variously estimated from 50 to 95 per cent. Loewenfeld quotes a table from Meirowsky, showing the ages of its establishment among a group of university students:

Age	13	14	15	16	17	18	19	20	21	22	23	24	26
Cases	1	1	2	11	14	20	24	29	19	11	8	4	1

This indicates 85 per cent. Data as to marriage among them are not quoted. The figure would probably be lower for a corresponding American group.

Between the relationships of marriage and prostitution there is no personal boundary, and the social one is sometimes hazy enough.[1] But for practical purposes there are present two distinctions between voluntarily childless marriage and a high-level prostitution. Marriage invests the relationship with a social sanction that has some advantages for the man and most important ones for the woman. On the other hand, it considerably impairs the personal independence of either partner,[2] and increases the sacrifices which must be made. The opinion prevails that no organic or intellectual companionship offsets the sacrifices of marriage, without the compensation of children. In our figurative terms, marriage alone does not take up the energy of a fully developed love-life; its mechanism requires the additional "load" of children to run with proper balance.

In the attitude toward the control of offspring, three

[1] Des Pfarrers Segen macht so viel
Als springt man über'n Besenstiel
Das sieht man bei besser'n Leuten, ha,
Lacht hell die Ziehharmonika
Und macht dazu widewik
Die quäk quäk quäk Musik.
"Simplicissimus," (*ca.* 1905).

[2] This, on the other hand, is more marked for the man. It is only under such liberal institutions as prevail in America that marriage holds for the woman a marked sacrifice of this nature. Often it brings a greater independence.

Weil bekanntlich manche Sachen
Welche grosse Freude machen,
Mädchen nicht allein versteh'n
Als da ist: ins Wirtshaus geh'n.
(Busch.)

stages are traceable. Among primitive peoples, Sumner remarks that abortion, like killing of the old, is the dictate of social expediency. As the struggle for existence becomes easier, more children can be cared for, and used in the tribe's work. One could spare the lives of the old, increasingly valuable for counsel. The growing value of children to the community raises a moral tabu against abortion, that in large measure persists among civilized peoples to our day. It is expressed in legislation. "Where religious and other sanctions give adequate support to the family instincts," says McDougall, "no serious diminution of fertility occurs. It is for this reason that ancestor worship is so favorable to national stability." Meanwhile the competition of civilized life becomes fiercer again, and it is more difficult to rear children under the standards imposed. Then the tabu breaks down, first among those to whom children are the most inconvenience, but preserved in superstition, or ignorance of how to escape it.

There unquestionably exist childless marriages to which both parties are voluntary, and in which adequate compensation is found elsewhere for the loss of independence involved. Strong outside interests serve to decrease the dependence of husband and wife on each other, particularly if they are *not* interests possessed in common. Such balancing factors for a childless marriage are somewhat more available for well-to-do persons than for those in moderate or straitened circumstances. Women stand in greater need of them than men, and the opening of various occupations to them is of special value in this direction.

Erotic motives for marriage are easier to state than to weigh. In the man, the most important motive is the

organic possession of a woman whom the nature of both or either prevents from being possessed in any other way. Desire for children does not alone suffice to concentrate affection upon a specific individual. "Eugenic" and "companionship" motives are usually to be considered as rationalizations. The same is true of the conventional reasons assigned as to why a woman attracts us (figure, eye color, hair, cleverness). With John or James of the first chapter, we must ask ourselves, why do these features attract us where they do not other men, and why do they not attract us in some other woman? We are keenly aware of the effects; but their causes lie in the unconscious. It is important to remember, that a partner may be sought, not in strictly sexual desire, but in regression, as a "mother"- or "father"-representative.[3] This is the key to many infatuations where the love object is quite lacking in the accepted sexual attractiveness.

In women, the desire for children has a larger share in the conscious motives for marriage. This seems associated with the fact that, in women, erotic pleasures are not usually so concentrated in the genital areas as in man. They are more diffused over the body generally. Sadger[4] observes that women of this, the more usual type, adapt themselves better to the care of children, since this presents special opportunities for the gratification of an extragenital hedonism (as in breast feeding). Maternal instinct is weaker in women whose desire, though strong, is concentrated about the genital areas. They often do not wish for children, or are less careful of them when born.

[3] *Cf.* "Mental Regression: Its Conception and Types," *Psychiat. Bul.* 9 (1916), *esp.* 457–467.
[4] *Jahrb. f. psa u. psp. Forsch.*, 3 (1912), 547.

The organic attraction to specific partners, to the exclusion of others, is usually regarded as more pronounced in women than in men. As with them, the selection is not to be understood upon conscious grounds. "Behavioristic" methods lend themselves better than normal introspection to studying motives governed by the unconscious. Abraham has published a preliminary study of this character, concerning marriage among relatives.[5] It is not that inbreeding produces inferior offspring, so much as that neuropathic individuals tend to inbreed. Such unions result through maldevelopment of the instinctive life. There is an early exaggerated attachment to the parents, which may be termed sexual in the sense that it is especially directed to the parent of the opposite sex. Jealousy of the loved parent is prominent, as are sexual reactions between brothers and sisters. This precocious eroticism operates to fix the affect upon the family circle, so that with increasing age the proper developmental transference to persons outside of it does not take place. In consequence, such persons remain unmarried altogether, or do not get beyond an adaptation which, in words of August Hoch, is something "still within the sheltered realm of the home." According to Hirschfeld, men of homosexual tendencies are apt to make cousin-marriages. A small group of cases is distinguished by late marriage, to a niece, especially, in which the man is much under the domination of the wife.

All these groups are characterized by what I would term the monogamic tendency. With most men the inclinations of puberty are not lasting, affection turning to many persons, one after the other. Often intimate attachments are formed, to be later dissolved. But with many members of such families as tend to inbreeding, the development is other-

[5] *Jahrb. f. psa. u. psp. Forsch.*, I (1909), 110–118.

wise. They lack the polygamous tendency. They are not adapted to flirtation or rapid change of personal relationships. As it is difficult for them to break up the familial fixations of childhood, so it is in later years. If they once fall in love, this attachment tends to be lasting and final [one-girl man]. Even if inbreeding does not result, the breadth of choice is obviously much diminished.

The wise virgin knows all this, and counts it to no man's credit that she is "the only girl he ever loved."

Of course there are non-erotic motives for marriage, such as money, or through selection of partners by others. In all cases, the problem of happy marriage is simply the compensation for the loss of independence. Organic satisfactions alone are not to be depended on for this. They are usually and most effectively supplemented by children, sometimes also by wisely used wealth, or intellectual interests.

The trend for propagation is the usual stabilizer of matrimony, whatever may be its rôle in bringing marriage about. Children and what they involve must be regarded as the most important factors in adaptation. It is generally apparent that with the continuity of the family secured, what the rest of life holds is of minor significance for human happiness.

Such are the different reactions summed up in an ordinary conception of erotic trends. They cover a wide range. Their operation in some form appears necessary to human adaptations. The next part of our inquiry deals with other important trends as consistent or not with these erotic adjustments. We can see, for example, that a trend of alcoholism is not consistent with a well developed love-life, while, on the other hand, it is an important adjuvant to prostitution. We justly speak

most of the economic trend, which is coördinate with the love-life as a fundamental tendency in us.

In general, the more self-centered the love-life is, the less involved is money or its equivalent in carrying it on. If the love-life is to be satisfied in autoerotic sense, the economic factor disappears altogether. Such desire does not involve the person's following any trend of economic value, but as one's love-life advances in the scale of altruism, it becomes more and more involved with economic needs. The more developed an altruistic love-life, the greater the sum of its energy to be balanced upon the world outside the self. The complete living out of such love-life is represented in the family. This is the direction the normal love-life takes and the end it reaches.

The relation of economic policy to erotic trends is twofold. First, granted that marriage or some lower adjustment gives adequate balance to the energy of the love-life itself, what economic policy is consistent with the proper adjustments thereto? Second, when (as in the unhappily married) the energy of the love-life is not balanced in the erotic trends, what economic policy is most consistent with other forms of balancing?

To found a family and rear children requires some money; and the more money is available, the better these things *can* be done. While it retains this supreme biological value, the pursuit of money must remain a fundamental trend. The most important source of money is paid occupation. That occupation is the most consistent with the love-life, which helps to carry it on best. The most natural measure of this consistency is the amount of money the occupation brings.

Financial return thus gains its dominant position in the

value of every career. The increased fullness it makes possible to the love-life is by all odds its most important rôle in human happiness. Its part in a lower-level eroticism should be equally clear. That economic policy, therefore, is most consistent with altruistic love-life, whose material compensations are closest to the person's earning capacity. But by no means every one puts this motive first in the choice of a vocation. To understand the choice of vocation upon other motives, one should regularly look for a "compromise formation" of the altruistic motives of the love-life, with other and egoistic motives.

Suppose for example, that John has a choice of two kinds of work, such as often comes to men in the professions. The first has longer and not too regular hours, short vacations, rather mixed associates, narrow range of reputation, with income of some $10,000 a year. The second offers short, regular and agreeable hours, long vacations, an agreeable milieu, with a distinct access of social prestige. Its income is $4,000 a year. In these respects the first position is more consistent with altruistic motives, its increased funds providing for a better family support. On the other hand, egoistic motives like love of prestige and ease, are more consistent with the second position, with its income sufficient for the comforts. Its choice would represent compromise between familial and egoistic motives. In view of previous considerations (Ch. I, p. 12), these egoistic motives could easily fail to be seen in their actual character. They would be disguised by rationalizations, such as that the less-paid position was more useful to society, or more beneficial to health.

The greater part of men's energies is ultimately spent

on familial trends. But, while love-life of conventional pattern absorbs the greatest part of men's energies, in but few men does it wholly absorb them, and in some it absorbs them very incompletely indeed. Thus, there will be a certain amount of the love-life unabsorbed by the marriage relation, to be "balanced" by outside activity. Unhappy marriage results from a failure of its trends to balance. The marriage is then like the electric motor whose resistance is too high to take the proper current; it will operate inefficiently.

As before mentioned, two solutions of such a difficulty are possible. One is to rewind the motor with less resistance, so that it will properly take the current — in other words, to remove the marital "resistances" between husband and wife, so that their affection may properly be spent upon each other. The reason why this is easier said than done is because such resistances are affairs of the unconscious. Surface motives, like cruelty, drinking, neglect, are readily enough determined, but not effectually removable until we understand *why* drinking, *why* cruelty and *why* neglect ensue. Of these causes, the offending party is likely to be quite unconscious. The "burglars in the garden" case mentioned by Pfister (p. 145) was one in which it was possible, by bringing resistances to the conscious, to so "rewind" the mental mechanism that a proper balance of the love-life was established.

Such are the solutions sought in psychoanalysis; they depend upon special personal influences rather than upon economic factors. If this solution cannot be had, another lies in affective transference of the energy unabsorbed in the marriage. Pfister cites an observation of this kind that can hardly be unique. The solution is

inconsistent with social order, but an apt illustration of the balancing process.

A drunken maltreater of wife and children develops intimacy with a widow and at once gives up these vicious practices; after a year his wife writes to this woman a fervent letter of thanks for his reformation; she must on no account allow moral considerations to interfere with the continuance of the *liaison.*

Little relation exists between economic factors and such a situation as this; but the importance of wealth for its adjustment in a more socially consistent way should be clear to every one. In sum, the living out of economic trends is fully consistent with the love-life at all levels. In the absence of internal resistances to the love-life, it simply increases the fullness with which the love-life can be lived. In the presence of such resistances, as in the cases just cited, the pursuit of wealth can, by affective transfer, itself absorb a large share of the unbalanced energy. Its material gains open a vast range of healthier interests than those of alcohol or adultery. Some direct interference of economic trends with the love-life is said to occur, particularly in the engrossed pursuit of great wealth, or in cases of "mental over-oiling." But for the great bulk of human adjustments, it is negligible.

To enumerate the trends serving to compensate an unbalanced love-life, would be a long task, and involve repetition of matter considered in Chapters I and IV. All follow the general rule pointed out in Chapter IV, that the transferred energy becomes fixated on the balancing factor (as an affective symbol) so that it is neither directed nor directible to the primary (in this case the erotic) trend. Aside from this, religion is the only balancing factor that shows important conflicts with

the love-life (e.g., celibate priesthood). But regressive fixations (Jung) block it considerably, as do social trends in ways still to be dealt with. We saw in Chapter II that the love-life is the most blocked of trends. It liberates more energy than other fundamental trends to be balanced elsewhere. Hence, the acute suggestion has been made that modern civilization has itself developed as the balancing factor of comparative sexual suppression prevalent among the peoples in whom it had its growth. The energy of the love-life earlier dissipated in primitive licentiousness was transferred to the work of civilization.

We now proceed to a similar consideration of the economic trend; its significance for human happiness; its expression or operation; and its chief consistencies and inconsistencies with related trends.

The economic trend has two phases; the use of wealth and its pursuit. The possession of wealth contributes to human happiness somewhat as follows. The miser's contemplation of his wealth represents, like the talent hidden in the earth, a wholly selfish satisfaction. It is a sort of economic onanism. As few people find satisfaction in it, as in that of erotic type. Still, on the egoistic level, the possession of wealth gives security from the harsher struggle for existence. The love of it is a *Sicherungsvorkehr* in Adler's sense. Wealth plays this rôle when it is unearned. As a class, those who inherit their wealth put it to more egoistic uses than those who have amassed it themselves. The same is seen in "marrying money," when the man who has done so gives up the contest for "adultified" (i.e., made adult) existence, and hides within his wealth as in a *Mutterleib,* for a life of self-indulgence. To marry money then operates as a regression.

At this level are the personalities whose satisfaction is in spending money rather than hoarding it, but spending it on themselves alone. This corresponds to the beginnings of altruistic erotism, in *liaisons* of incidental and low degree. Advancing in the scale of altruism, the value of money, like that of love, depends more and more upon its expenditure for others. This takes place most effectively along familial lines as has amply been set forth.

It is a truism that under the degree of affection which marriage tacitly assumes, the happy home depends on little more than the economic necessaries of life.[6] The part played in human happiness by *expenditure* of wealth is not so great or direct as that played by the love-life. That this is true of the *acquisition* of wealth is more doubtful.

Biologically, the need for food is reckoned as more fundamental than the sexual trends. Among animals generally a greater amount of energy appears directed into the former channel. The love-life is dependent on a nourished organism; what Napoleon said of armies is quite true of lovers also. *"Sine Cerere et Baccho."* But eating, itself, is hardly a method of happiness among normal men. Above certain minima of food value, cleanliness and palatability, the choiceness of the food makes (after childhood) a negligible difference to man's mental adaptation. No normally nourished man is so happy over a meal as a dog over a bone. The mightiest trend

[6] Zwar ich habe nur ein Zimmer
Und das Zimmer ist sehr klein
Doch es können darin zweie
Ganz unbändig glücklich sein
In dem einen, kleinen Zimmer. . . .
(Bierbaum.)

of animal life has fallen low. It would seem that the energy invested in the animal's quest for food has been transferred or "sublimated" into other kinds of human activity. The dog's happiness in the bone becomes the man's joy in his work. Such a process can indeed be traced below the human species. The cat's unbounded pleasure at the mouse it has caught is in the capture for the capture's sake, not in its food value.

It has been usual to place much of this access of pleasure in work to the credit of erotic trends. But it can hardly be supposed that joy in work began with modern civilization. Its age is one with that of art. It is older than the sexual suppressions to which achievements of modern civilization have been credited. The energy balanced by the joy in work must be ascribed to a more primitive source. Probably this access of joy in effort balances the depreciation in the value of the nutritive trends for normal happiness. The affect that in the animal world invests food makes the joy of work in man.

The sentimental glamour that surrounds "work" is only less than that of love itself. The "pleasure at being a cause" is not dependent on the amount of money earned by the effect. Nor can we say where work for others stops and work for work's sake begins. Thus the relation of work to a strictly "economic" trend is ill-defined. The main reasons for considering it as such are the genetic ones above mentioned.

Work presents the same gradations of egoism and altruism as do the love-life and the use of money. Scholastic pursuits furnish the more purely egoistic satisfactions to be obtained from work. The altruism of pure science is more remote than that of applied science or technology. More direct service still is performed by

the physician, the merchant, the transportation officer. As pointed out in Chapter I, (p. 21), no objective difference in the value of these pursuits for happiness can be discovered. Each is capable of properly balancing the work-life in different types of personality.

It is well said that the world pays extravagantly for its luxuries, liberally for its amusements, grudgingly for its necessities, and parsimoniously for its spiritual ministrations. Thus a relation, that underlies supply and demand, exists between kind of work and material return. Balancing material commands the greater rewards. It would seem that, in civilized life, the fundamental trends are met in such a way as to leave much unbalanced energy. The food trend is met simply and the love-life incompletely. Hence the characteristic demand of civilized life for balancing material in literature, art, travel, sport, etc. Sidelight on the place of religion comes in an observation that the sales of the Bible have inverse ratio to business in general. In other words, the Bible increases its sales when people have less money to spend. Religion is sought when other helpers fail and comforts flee, but other balancing material is preferred while purchasing power remains.

The economic trend in its primary definition — accumulation of wealth to the limit of ability — was seen to be most consistent with the love-life. That is a problem of vocational guidance. Human nature harbors other trends, however, that are inconsistent with the economic trend. Regressive tendencies, in the form of asceticism, oppose the economic equally with the love-life. In fasting usages, this is applied directly to food. A further trend is directed against money by rationalizing poverty as a virtue. Sumner points out the further

inconsistency of this rationalization, since it makes the individual dependent on the less virtuous who have money to give. In modern life, the trends of work for work's sake are often inconsistent with the economic function of work. Egoistic varieties of work are more liable to this inconsistency with the fundamental economic trend.

Social trends are shown in organisms whose normal actions depend on the presence of others of their species. Common ants and honeybees are called social animals, because their normal nest-building, securing of food-supply and propagation, depend on the coöperation of many bees and ants. It is noted that powerful and predaceous animals, like the tiger or hawk, are regularly solitary, while creatures of social habits are weaker. With a social habit, pronounced individual strength is not so necessary to survival as with a solitary one.

STAUFFACHER. Verbunden werden auch die Schwache mächtig.
TELL. Der Stärke ist am mächtigsten allein.

No ethical comparison is required between the individual giant and the well adjusted member of the group strong in union. Man has evolved as a highly social being. The fundamental nature of man's adaptations, depending on mental rather than physical fitness, plays directly into the hands of social trends. Organized groups intelligently directed are far stronger than the sum of their individual powers, from battle to the football field. The social trend of man finds its sanction, like private property, in its utility.

The trend for food cannot fill man's life, because if it did, he would not seek to propagate himself. The added sexual trend cannot fill it, because if it did, he would lack

the social trends decisively useful in his survival and development. It is biologically fitting that man should require for mental balance, not only economic and erotic satisfactions, but others dependent on social relations with his fellow men. Interdependence is the price of coöperation which gives the highest force in the contest with nature, as well as against aggression by the foreigner.

The social trend, or herd instinct as it has also been called, is the tendency of the individual to act in conformity with the *mores* of his group. That definition must be vague, because *mores* differ so greatly according to age and place. "If two planets were joined in one," Sumner puts it forcibly, "their inhabitants could not differ more widely as to what things are best worth seeking, or what ways most expedient for well living." The love-life, on the other hand, is practically confined to objects of opposite sex, and family; the objects of the work-life are money or joy in work.

As we see it now, the value of social trends for human happiness is of three kinds; to be summed up in broad conceptions of the words patriotism, social amusement and social service. Under the first head are included a man's feelings and reactions toward his political group. Under everyday conditions this phase of the social trend has no very positive value for happiness. People then keep the law as they eat; not because it is joyous, but because it is expedient to do so, and we can expect to find no great balancing function in this phase of the social trend. It is no trend to absorb much of our free energy. It corresponds more to the eating which obviates unpleasantness, than to the love that brings joy.

On the other hand, it is most apparent that if a vigor-

ous state is threatened, its members readily respond by collective action to defend it. In more highly organized states, there is a group sanction which systematically allots such service to those most fitted to perform it. Such service is compulsory in the same sense that marriage is compulsory; it is the best response to an inevitable organic need. Then, when a vigorous state is threatened, the capacity of the social trend rises without limit to take up energy going normally to erotic or economic trends. Their energy is diverted to patriotism, as a short circuit takes the power from a street-car system.

A sanguinary metaphor may be taken from the geological descriptions of how a stream "pirates" the waters of another stream, or "decapitates" it. If two streams run down opposite sides of a mountain pass, the one which flows over the less resistant soil will deepen its valley faster and "decapitate" the other stream by capturing its headwaters. As the water follows the stream bed of less resistance [7] and the electric current turns from the high resistant circuit to the low one, so does a social trend demonstrate its least resistance in the piracy or decapitation of

[7] If an obstructed instinctive life is compensated through an affective symbol (like the pet dog of Chapter IV), it is well known that ultimately the affective symbol absorbs the energy so completely that little or none is available for the fundamental trend when the occasion comes to exercise it. The concept of decapitation represents this as follows:

Suppose that social convention and other circumstances interpose an effective barrier to the outlet of the love-life, as for many people they do. Then, as water behind a dam, the energy rises until it reaches another outlet, as in love for the typical pet dog. Still obstructed at the primary outlet, it begins to flow out through this secondary channel. In doing so, it continually deepens that channel, as a brook flowing through its ravine; while the primary channel, which is dry, remains at its former level. In time, this secondary channel is so deepened that its outlet is below the level of the original channel, which has remained dry. Then, even if the obstruction is taken away, there will be no outflow through the primary channel. It has been decapitated, its energy pirated, by the less obstructed trend. The capacity for living out the more fundamental tendency is lost.

erotic and economic trends. While John is in pursuit of familial, professional and recreational interests, his people are plunged into war. Then if social trends in the nation are superficial, he will not change his conduct, reflecting that to offer his services is simply to sacrifice himself and family for some shirker to usurp his hard won place in life. The familial and economic energies will not be pirated. If, however, the nation is well organized through strong social trends in its members, economic and familial trends no longer dominate his conduct. Under the social sanction of universal service, he and his fellows present themselves to render such aid to the state as it requires, to the exclusion of economic and familial pursuits.

The concept of "decapitation" of trends may be represented more schematically in this way. The sum of vital energy is like a reservoir of water, whose supply is continually pumped into it from below. It has openings at different levels to release the energy for more fundamental or more superficial trends. John's need for food is at a low level, but takes a very small part of the energy stored in the reservoir. The outlet of autoerotic trends is pretty well plugged now, and instead, the water rises till it meets the great sluice gate of familial trends. Nor does this carry away all his abundant energy, but the water rises until the inflow of energy is finally balanced by the minor outlets of fishing, political and similar interests. Now comes the war, flinging open the gate of social trends. It may be so small and high that no water reaches it. But if, as we abundantly see it, it is great and deep, the interests of fishing, politics, mathematics, even family, are quickly decapitated of their energy.

The most primitive trends of self-preservation are robbed of their energy to operate. One has but to think of the self-immolation of Europe, and the lesser but more individually voluntary sacrifices of our civil war. Such a diversion of energy from individual to social trends takes place at the command of rulers in much the same way as Niagara is diverted to electric turbines at the command of the engineer. He could not command Niagara

without gravity. Without instinctive willingness to sacrifice self for group, there could be no ruler to command war or peace.

The social trend here runs counter to practically all the trends serving erotic or economic instincts. It remains consistent with the instinct of pugnacity; though some think that modern war conditions, in which there is less contact between enemies, make this direct access of energy to the social trend unimportant. Joy in death for group appears as the summit of altruism ("Greater love," etc.), upon the antipodes of egoistic tendencies. Between this extreme of altruism and the extreme of introverted egoism (as that of the catatonic stupor), there are many grades in the balance of altruism and egoism in personalities. There are people outside institution doors who exist but for creature comforts, incapable of deep relationships with fellow men. Their mental balance is struck at a low-level autoerotism, but they are not necessarily unhappy in it. An epicure in pleasures of sense or intellect may, in their pursuit, produce economic or artistic creations that the world values; and represent to the world an autoerotism of higher level. Marriage and other social relationships that limit independence are themselves inconsistent with the strictly "self"-realization of autoerotic natures. In all sexual relationship there is some limitation of egoistic trends, which becomes pronounced when a family rears many children. Among insects this may go so far as the parents' dying to create the offspring. Man does not normally do this, but he dies for the preservation of the group. Where he sacrifices but part of his egoism for the family, he sacrifices his very existence for the group (and often the family's so far as he is concerned). When the Decalogue bids

us not kill, steal, or commit adultery, it expresses social trends in useful restraint of individual ones. But in full force the social trend decapitates both of these, saying not only *thou shalt kill,* but *thou shalt be killed,* that thy neighbor may live more abundantly.

As familial trends " decapitate " autoerotic, and balance economic, ones, so does the social trend at once balance and decapitate autoerotic, familial and economic trends. The joy of dying for group must be accepted as real. Its expressions cannot be set down to poetic hyperbole. It bears tokens, however, of a divided origin. Sentiment marks the sweetness of dying for one's country, though the effective service of one's country is not in dying, but in killing the enemy for it. Indeed, patriotic sentiment is replete with the " death-wish "; the hero regrets that he has but one life to give for his country, not that he has killed so few of its enemies. This is but another token that life is not to man the ultimately precious thing that other animals account it, but that there are strong forces in us making for its voluntary termination, which sometimes become so strong that they result in suicide. We may look upon the joy in death for group, therefore, as determined partly by an active social trend of service to the group, and partly by a regressive seeking to escape the task of life, to be " one with Cumberland forever," which tendencies reinforce each other against the individual will to live. The simple willingness to die for one's country is not a social trend, so much as a regression that is rationalized in patriotic sentiment.

The patriotism of non-combatants in war is reënforced neither by the instinct of pugnacity nor by the " death-wish." For them the task of living is simply increased in severity. Yet the social trend can balance these pri-

vations also. A spirit of thankfulness is reported among the women of a combatant people that they live in a time of opportunity for such sacrifice.

It is only in group-conflicts that social trends take on this supreme significance for the mass of men. In this respect the sentiment of patriotism is in a class by itself. The possibly regressive element in patriotism makes it noteworthy that the value for human happiness of service to the state is greatest precisely when the greatest renunciation is involved. Social trends may be so strong as to afford a general pride in service to the state. A European will conceive more readily than an American how an honest John might prefer a $4,000 state position, rather than one of $10,000 with a private organization. The ambition to serve the state may thus lead to inconsistencies with individual trends, apart from the supreme tests of war.

When unrequited service is systematically rendered to unrelated individuals, which is of such a character as is normally discharged among related individuals, this comes under a technical conception of "social service." It is not confined to humanity. It has been observed of breeding swallows, whose nests were destroyed in their absence, that after many hours' searching for them, they would fly into the nests of other birds, and attempt to feed the young, even though attacked by the actual parents. Thus does the principle of social service operate as a balancing factor in the animal world. The birds take thought for other nests because they have none of their own. On both human and animal levels this is an attempt of the mental organism to meet a lack of balance among the personal instincts, by analogous actions toward foreign individuals.

Recreations, as such, do not hold a commanding place in the balance of human trends, but most of what they have is social. The normal attitude toward life has created the sayings that pleasure shared is pleasure doubled, and that happiness was born a twin. Social games predominate vastly over solitary ones. The latter do not even maintain themselves as such, but develop "social solitaires." Who prefers to go alone to the play, the concert or the golf-links? The social trend also lends sanction to a form of satisfaction otherwise condemned; nothing like the obloquy attaches to drinking in company that attaches to drinking alone. Persons having fads in common (although these be not in themselves social, e.g., an interest in natural history) form societies to pursue them together. Clubs are formed that permit closer relations with selected companions. While such interests need not be very deep, their wide diffusion makes it well to mention them among the contributions of social trends to mental adaptation.

Except for the instance of war, the social trend is in the main consistent with economic and familial trends, and reënforces more than inhibits them. To the social coöperation of men the race owes such economic conquest over nature as it has achieved. Greater and more varied economic satisfactions are possible to the average family through its relations to the community than would be possible to it alone. Elementary conveniences like lights, sewage, transportation systems and social amusements establish this. Economic and social trends play into each other's hands. The greater the production and diffusion of economic necessities, the less fierce does the competition for them become, and the more room there is for the development of humanitarian and social sentiments

toward one's fellow men.[8] Conversely, humanitarian feelings draw men together for common ends, as is requisite for great and lasting control over nature. As economic evolution proceeds, it becomes more profitable to the strong that the weak should have more freedom; because then they coöperate more effectively for the subjugation of nature. Thus slavery and serfdom give place to freer social institutions.

Allusion has just been made (p. 296) to the counterbalancing of erotic and familial trends by social ones. Clearly a general trend toward social relationships increases the possible choices which can be made, and is thus consistent with the fullest love-life. It introduces rivalries which may be disturbing to the individual while helping to select the race. Social usages also restrict the choice of partners in various ways. They enjoin celibacy for certain classes; they impose now a sanction, now a tabu upon promiscuous relationships; they select classes (totemism) among which one may or may not choose partners. Most of these have other-worldly rationalizations which are presented upon religious grounds.

Where the family is the social unit, the fabric of society depends on the stability of sexual relationships. If actions inconsistent with such stability are not prevented by the *mores,* the society degenerates. Society has now to deal with a lack of balance between erotic and economic trends. The period at which it is economically possible to found the family is pushed far beyond the period of erotic maturity. Until this balance is restored, rigid sex *mores* are not to be looked for among civilized peoples.

The foregoing material leaves us with these chief con-

[8] Sumner, "Folkways," 39.

siderations. *Happiness is the conscious phase of mental adaptation.* Mental adaptation consists in a balance between the energy the organism has to spend, and the outlets for expending it. The outlets useful for this purpose are balancing factors. We paralleled these to the balancing function of the flywheel in a steam engine, or the weight of the armature in an electric motor. Comparing vital energy to the electric current, we represented different trends of conduct as different electric motors, which could take up more or less of the energy to be spent. Mental adaptation corresponds to the efficient taking up of vital energy in these trends. Money plays the same rôle in facilitating their operation as oil does in that of machines.

Coming to the topical consideration of different human trends, we examined some of the chief ways in which men seek happiness. We saw that it might be sought in selfish, egoistic ways, or in unselfish, altruistic ways; but that it is more frequently found in the latter. We discussed the bearing of this upon the love-life, which reaches its fullest development in maintenance of family. In this, and in subsequent discussion of economic and social trends, we followed the plan of describing what sort of reaction the trends involved, what their respective value for human happiness appears to be, and the ways in which they are consistent or inconsistent with other important trends of personality. We observed the mutual consistency of the fully developed erotic and economic trends. An ascetic negation of economic values is inconsistent with the love-life.

Turning to the economic trend, we observed egoistic and altruistic methods of happiness in the expenditure of wealth; how the egoistic shades into the altruistic.

Its direct value for happiness is not often great, though we saw that it is important in opening up other methods of satisfaction. The pursuit of wealth on the other hand, carrying with it the "joy in work," has a much larger value for happiness. The suggestion was made that, as we look upon modern civilization as the product of energy derived from sexual inhibitions, so may the joy in work represent an affective transfer from a more animal joy in food, that is, be a "sublimation" of nutritive trends. The chief inconsistencies with economic trends are those of asceticism.

The biological significance of social trends was briefly pointed out. Social trends assume their greatest importance for mental adaptation when the social group is threatened in war. Then familial and economic trends, even elementary trends for self-preservation, are "decapitated" of their energy; and the individual gives his life for the group under the trend of patriotism. But this trend is probably reënforced by a regressive, "death-wish" admixture. The value for happiness of service to the state, as such, varies among different groups, being a measure of their social solidarity. The technical "social service," not rendered to the state but to individuals, is not a fundamental phase of the social trend, but has value for happiness simply in balancing obstructed personal trends.

The minor balancing values in recreations are dominated by social trends. Social trends are essentially consistent with economic trends in that they permit greater accumulations of wealth and greater satisfactions in its use. They are also consistent with erotic trends, in their widening of the range of selection. In special instances, like the totem or sacerdotal celibacy, they obstruct a

natural selection. Owing to the lack of balance in civilized life between economic and sexual trends, the social sanctions of erotic relationships cannot be of the most rigid character.

We proceed now from the point that mental adaptation is given in balanced reactions, and by our survey of how different trends contribute to the balance of reactions, to the final considerations of what controllable factors in the environment — educational policies, in other words — are the most consistent with the purpose of adaptation and the attainment of happiness.

This survey of mental adjustments began with a comparison of vital energy to electrical force. Faulty mental adjustments were compared to misapplications and short-circuitings of current. We may briefly develop a final element in this analogy. There are many kinds of electric current, high and low voltage, direct and alternating of different frequencies. When the dynamo produces electricity, it produces the sort for which the generator is wound. But this kind of current may well be unsuited to every kind of work the current is to do. The best kind of current to send a long distance is not the best adapted to do work after it gets there. Street-car current is not the best for fan motor purposes. For this reason, the current that comes from the generator is passed through special instruments, known as *transformers,* each one of which changes the original current passing through it, into whatever kind the consumer needs for his particular work. Only by passing through the proper transformer system is the current able to perform the service, on the payment for which the plant depends for its existence.

The same is true of the energy of life. We come to

know it only after it has passed through certain transformers, and performs the work of our existence. Not only must we have sufficient energy to do the work of our lives, but, like the lighting and street-car companies, we must have the power in the form in which we can make best use of it. Take two men of equal endowment, and train one as a lawyer, the other as a physician. The one has transformers to convert his energy into legal practice, the other into the healing art. But the motor of the healing art will not run on legal current. Neither could do the work of the other, any more than ordinary fan motor or lighting current operates street-cars. A third man, without training, can do only the simplest manual tasks. He has no finely adjusted transformers, and has but the crudest sort of energy to dispose of.

A man fitted for life is then like an electric plant not only well built, but equipped with such transformers as will give current to run the motors he can use. This is the right object of all that control of experience which we term education. Education is, or ought to be, a control of experience that better fits the personality for the duties and privileges of life.

This is founded on mastery of one's love-life and economic existence. There is no mastery of fate or captaincy of soul without them. They are its concrete tokens. Normal maturing or "progression" means the achievement of these in greater or less degree. Opposed to such achievements are the regressional trends of autoerotism, asceticism, and the like. The concrete objects of regressional trends are the parents. These attachments are not innate. "Kinship is purely a matter of fact and history," writes Sumner. "There is no 'natural affection.' There is habit and familiarity, and the example

and exhortation of the parents may inculcate notions of duty." On the other hand, these attachments are greatly strengthened by the long and impressionable period during which they operate. Mental growth, or progression, involves the breaking up of the infantile attachments. The right task of education is to insure this in every possible way.

If Holmes remarked that a boy's education should begin with his grandfather, Freud has said, in effect, that it is ended with his first trousers. He expresses a proper surprise that, for the formation of character, we lay much stress on heredity and the education of later years, and relatively little on what happens in the infantile years. In that respect, the child is also the father of the man, more intimately than the progenitor indeed. There is a growing conviction that the mental events of infantile life are of far more significance for adult personality than we have supposed, and that they deserve far more care than we have been giving them in proportion to the later years.

Thus an important, if negative, part of educational policy is the avoidance by elders of such conduct as tends to promote "regressive fixations" in the child. Regressive fixations are transformers whose current is of little value in adult life. In illustration of such conduct, Pfister warns strongly against excessive organic intimacies between parent and infant. It is, of course, the mother who is naturally concerned here. It is generally bad for the child to be taken into bed with the parent. To have the child sleep in the same room with parents is especially unwise after the first year; observation of the parents' erotic reactions has a very deleterious effect for them at this time. Even ordinary caresses in the pres-

ence of the child are often to be strictly avoided.[9] The child is made an "erotic plaything." As this is uniformly bad for the child, it cannot be regarded as an effective token of mother love. Nor does it arise in this way, but rather to supply the balance of an incomplete love-life toward the husband.

A corresponding result is reached if the father exaggerates his protective rôle. Ferenczi [10] reports this in two women patients whose fathers were also their teachers. A man's organic over-tendernesses toward relatives or children, more especially daughters, are also a natural balancing factor of incompleteness in marital life, but inconsistent with the mental welfare of their objects.

The general result is to fix the child's associations of important organic and other satisfactions with the presence of the parents. This hampers the developmental transference of their affects to the objects outside the family to whom they will properly belong.

We may look for clear examples of parental fixations among only children, as these are naturally quite subject to the influences that bring them about. We owe to Brill such a study of adjustments to life among only children. He reports observations [11] of 400 such, 172 men and 228 women, ranging from 18 to 68 years, mostly psychoneurotic patients. Their median age was 34, i.e., the same number younger and older. Only 93 had married; but the significance of this fact is limited by our ignorance of how early and frequent marriage is in psychoneurotics who are not only or favorite children.

[9] Pfister, *D. psa. Met.*, 475.
[10] *Jahrb. f. psa. u. psp. Forsch.* 1 (1909), 449.
[11] Brill, "Psychanalysis" (1912), 253–266

Some 36 per cent were characterized by aberrant erotic trends such as homosexuality, anesthesia, impotence, exhibitionism and the like. He considers that only children or favorite children markedly prevail in these classes.

Besides these deficiencies in sexual adaptation, the regressive fixations bring about a lack of adaptability to competitors in life. The only child is especially associated with adults to the exclusion of children of his own age. This eliminates from his life the normal play-period through which, sharing the childish rivalries, quarrels, triumphs and disappointments of his equals, he should pass naturally to the more serious rivalries of adult life. He becomes precocious in "book" knowledge which never has the test of application, and develops *habits of deference* to elders which he finds it very difficult to cast off when his adult competition with them begins. From being habitually over-indulged, great sensitiveness to slights develops; thus Brill mentions an only daughter who attempted suicide "because her best friend had received more attention than she at a social gathering." He draws a very pretty parallel between these traits of the individual spoiled child, and the inferior social adjustment long shown in "the only and favorite child of Jehovah, the Jewish race."

In 1000 cases of repeated delinquency, Healy found 119 cases in which the delinquent was an only child. This is slightly the largest group of single delinquents from all families in his table. Its interpretation is limited until we know the general frequency in that social group of one child families compared to larger ones. As Healy indicates, it is questionable whether the conditions which are supposed to surround an only child make espe-

cially for *delinquency*. They would not seem conducive to the more active type of offenses.

Parental fixations possess a share of salutary properties for the child. They make his satisfactions dependent on an outside object, i.e., the parents, and not on satisfactions from himself. It has been noted that the child has about him a number of sources for such gratifications, which are often things indifferent, even repulsive to us in later life. Infantile thumbsucking is a primitive manifestation. They center largely about excretory functions. Some authorities see vestiges of them in such practices as picking the nose or biting the nails. The tenderness of parents plays a useful rôle in freeing the energy from these "autohedonic" paths of discharge, and transferring it, but not permanently, to themselves. Pfister therefore warns with equal earnestness against an opposite extreme of harshness in the parents:[12]

> The child must learn to bring his love-life under external control. . . . If the child is repulsed by the parents, . . . the child must again transfer from the mother the affects already associated with her through her functions of feeding and bodily care; and unless some outside carrier of this affect, such as a grandmother or a teacher, is available, the parental repulses result in introversion. We know that thereby the dangers of misanthropy, shut-in-ness, eccentricity and life-weariness are brought near; moral development, the unfolding of personality and altruism are imperiled.

The following words by Miss Tobin[13] of Chicago closely parallel Pfister's remarks. The different connection which suggests them adds to their pertinence.

> In all schools are found children who do not "fit in" with the regular work. They are unresponsive; cannot work in

[12] *D. psa. Met.*, 462–463.
[13] *Psychol. Clinic*, 9 (1916), 266.

groups; are irritable or over-sensitive; will not play, rather brood in corners; are hostile to society. Sometimes they show a tendency to damage things or torment animals or their companions.

They are individualistic. Every command must be given separately to them. They will not listen unless directly addressed; and will not respond. The result is that either their undirected energy takes the form of mischief and they become incorrigible, or they shrink back into themselves and become apathetic, sitting in their places with no interest, but conscious of the indifference of their companions.

We surely can appreciate Miss Tobin's concept of "undirected energy," and the antisocial outlets for its attempted balance. Whether the regressive and egoistic reactions so well described by her are the result of parental fixations or of the more primitive autohedonic ones, the prophylactic lies in the normal play-life of the child. Science can add nothing to the social verdict that the best laboratory of mental adaptation is a family of brothers and sisters. He was a wise counsellor who advised the young man to marry a girl who had many such.

Outside of this, the great counterweight of parental fixations is the school. Most considerations point to the wisdom of introducing it as early as possible, not so much for the sake of its formal discipline, as for its natural commingling of many children freed from parental protection and restraints, on equal terms. In the kindergarten age the inevitable, but still weak, parental or primitive autohedonic fixations quickly break down under the stress of normal rivalries, no less intense for being childish. In the school, more particularly the boarding school and the college, these rivalries are gradually changed into forms more resembling the actual struggle for existence.

Before proceeding to these, two other points in parental relationship may be mentioned. We know that egoism is

natural and healthy in the child, and that altruism comes with maturity. The mistake of forcing the growth of altruism is perhaps not so frequent as unfortunate when it occurs. Such, for example, would be the attempt to train the child to give a share — sometimes ridiculously large — of its pocket money to some charity. No normal child does this ungrudgingly. It would be no more absurd to have the child marry, and expect it to lead a normal love-life. The will to these sacrifices is a part of adult trends. Two results are possible. One is a form of "over-compensation" (Ch. IV). The child grows up to be stingy, as the child tantalized with unshared delicacies becomes a selfish *gourmet,* or the once oppressed tenant becomes a harsh landlord. Otherwise an exaggerated altruism develops that well-nigh cripples him for competition. In view of children's imitative tendencies, it is an additional precaution, for parents not to obtrude their benevolences upon their children's notice. The essential point is that such altruistic motives should not be cultivated in children, as involve any notable sacrifices on their own side. It perverts their normal instinctive life to do so.

A normal self-assurance is generally conceded to be the most important conscious phase of one's mental endowment. Compared to real incompetence, the feeling of inferiority is about as difficult a barrier to achievement, and a far more difficult one to happiness. An easy way to breed it in the child is to prevent him from sharing in common sorts of play because of dangers which they may have. The child wants to do what he sees his fellows enjoying, and at once feels himself "different" if parental authority interferes. The normal play-life of children, from skating to football, is bound up with some

amount of bodily risk. The child may be prevented from sharing them, by direct prohibition or especially by lurid pictures of the dangers they involve. Then the child, observing that normal children can do these things while he may not, having them pointed out as fearful to him while they are clearly not so to his fellows, can scarcely react otherwise than by feeling inferior to his fellows in their natural activities. Sissies are made, not born; and if they are not to be made, the child must be allowed, if not encouraged, to take the normal risks of childhood play. The custom is happily waning of letting young children find enjoyment in the wanton use of explosives. Yet so common sense a deprivation as this would work harm if not balanced in the pursuit of a similar but more productive sport, as the use of firearms. This is a normal ambition in every boy, not to be thwarted, but rather used to inculcate steadiness of "nerve," mechanical deftness and the care of valued objects.[14] A child's enthusiasm for bodily skills is also, in the hands of an honest parent, a deadly weapon against pernicious habits, from too fast eating to masturbation.

The main thing is the child's willing competition in the natural strivings of his fellows. If he shies at these, it means a persistence of parental or primitive autohedonic fixations. To shame the child is simply to confirm an existing sense of inadequacy. "Now swim, ye little divil, swim!" cried a big Irishman on flinging a seven year-old into deep water after less coercive and less successful trials — and he swam. The adult situation of "root, hog, or die" is quite reproducible for childhood, except that we do not make him root for the same things. A wholesome forcing that can always be effective short

[14] "Der Soldat soll sein Gewehr schätzen wie seine Braut!"

of brutality presents the wisest management of such cases. It is not the child we are breaking, but regression. We are simply reënforcing the progressional, healthy trends necessarily present in the child, against the tendencies that compass his undoing. The greater satisfactions will be found in the more normal pursuits, as he is trained to follow them effectively.

The self-confidence toward nature that comes with skill in making a box, building a fire, paddling a canoe or hitting a mark, must be supplemented by self-assurance in competition with fellow beings. This comes only by doing well *things of which they can see the value.* Jack will not be better assured among them for a perfect spelling lesson, or a prize for never being late at school. His pride in these accomplishments simply builds a teacher-fixation instead of a parental one. Jack's fellows will respect him for heady base running, for skillful diving, for an ingenious bit of handiwork. Only practice in instinctive competition builds self-assurance in it.

The purpose of formal education is twofold: first, to bring together persons of similar ages for the development of a normal play-life; second, to develop specific aptitudes which will be of value in achieving economic independence. In the earlier years of schooling, their rôle is nearly equal; the discipline of the three R's yields little, in its value for the child, to the discipline of the recess. Gradually, less essential studies come into the curriculum, and the discipline of "student activities" becomes more important. When college is reached, there can be little question that, in practice, the extra-curricular activities are more important for the future than those of the classroom. It is closer to the tests of actual life to be successful in track athletics, in student dramatics, as

the business manager of such activities, and in student politics also, than to be successful in almost any performance of the classroom.[15] The college has become, very likely for the best, a school of social experience, with the curriculum one of the symbols of its group-community. Some of its disciplines train one for no other service than teaching them. The best balanced student or teacher does not regard the curriculum as the essential purpose of the college career. Thus a teacher's personal qualifications are often of greater importance than his professional accomplishments.

Of educated people, psychopathologists give the most depreciative opinions of the present formal education. "First we must learn to stop doing harm; then we may learn to do good," is the remark of one. That is, they think it does not contribute to the individual's adjustment to life a share commensurate with what is spent upon it.[16] To understand how this opinion arises, one should recall the fundamental conception of this adjustment as a balance of the instinctive life. It is then observed how consistent is formal education with the maintenance of this balance.

There is much in it that fares hard by such a criterion, the classics perhaps hardest of all. Their economic value is negligible, and their satisfactions are egoistic, such as do not meet the usual demands of adult personality. This applies to the humanities in general. Sometimes they are commended for providing intellectual "resources," when other satisfactions fail. But the very

[15] *Cf.* Joseph Lee, "Athletics and Education," *Harvard Alumni Bulletin*, 18 (1916), 572–574. *Also* Hollingworth, "Vocational Psychology," 166–167.

[16] *Cf. also* Abraham Flexner, "Parents and Schools," *Atlantic Monthly* (July, 1916), 25–33.

cultivation of "resources" can help the deeper satisfactions to fail. When a man begins a long journey, he does not burden himself with crutches lest he fall lame. He takes proper footgear, that he may go quickly, with no need for crutches.

The sciences fare proportionately better, having closer contacts with practical life, and drawing the attention more to phenomena outside oneself. Regarded solely from the resource standpoint, the invitations of nature study to outdoor existence, with the sociable elements that are often combined, make them healthier reactions than the humanities.

"Too much teaching and too little training" is a criticism of deeper level. Teaching is easier than training, because teaching is simply to know, while training is to do. The play-life of "student activities" trains, where the classroom stops at teaching. "Book-learning," Sumner reminds us,[17] "is addressed to the intellect, not to the feelings, but the feelings are springs of action . . . the education that governs character . . . comes through personal influence and example. It is borne on the *mores*. It is taken in from the habits and atmosphere of the school, not from school textbooks." Outside of vocational training, the higher formal education provides balancing factors only in the more restricted sense described on page 274. The Talmud to the contrary,[18] knowledge is no more a method of happiness than is wealth. Wealth is a means to happiness if it buys the right things; education is a means to happiness if it learns the right things. The one method of happiness through

[17] "Folkways," 629.

[18] "The study of the law is of even greater merit than to rescue one from accidental death, than building the Temple, and greater than honoring father or mother." Moses, *Path. A. Rel.*, 141.

education, wealth or anything else, was inscribed on a certain abbey gate: *Fais ce que vous vouldras.*[19] The inconsistency of education with happiness begins where it evades the instinctive life; where it teaches the conscious to play the instincts false, and divides the personality against itself.

With the growth of the vocational training idea, it may be expected that formal education will come more and more into harmony with economic trends. Efficient vocational training needs wiser choice of vocation than the adolescent himself is in a position to make when the choice should be made. Such greater wisdom, fortunately, there is reason to look for elsewhere. An old story exists of a man who tested his son by leaving him alone with a dollar, an apple and a mouth organ. If he displayed chief interest in the dollar, he should be a banker; in the apple, a farmer; in the mouth organ, a musician. Returning to find the mouth organ sounding vigorously, the apple a core, and the dollar in the boy's pocket, he decided on a political career for his son. This little myth is the popular expression of a principle that reaches a more scientific form in the concepts of affective transference and sublimation. The idea is to lead the energy into useful actions which are enough like the childish interest to make such a transference effective. The instances of the water can and the bridge builder may be recalled; and, on a higher level, the superb allegory of sublimation in "Christopher Hibbault, Roadmaker." Thus the genius in vocational guidance determines the useful paths into which most of the childish energy will most readily be transferred.

[19] Compare Beechnut's instructions to Stuyvesant on the subject of travel.

Formal education as we know it, does not concern itself with erotic trends. Often there is no attempt at their direction by those having most natural interest in the adolescent's welfare. The reason for this is a vaguely defined tabu known as "sex-resistance," the strongest irrational force in modern life. Its source is not known. Keller ascribes it to religion. Bleuler follows it to more individual sources, but without his usual convincingness.[20] A general tendency for notions of sacredness and uncleanness to fuse in the human mind may be suggested in partial explanation. The result is to prevent any formal discipline regarding erotic trends, or to pervert its effects. Jung makes the suggestion that the tabu is more in evidence now than formerly, because the function of religion as a balancing factor in sexual suppression is breaking down. Lacking this balance, eroticism begins to reassert itself, and, conflicting with the tabu, makes a large share of the "nervousness" of modern civilized life.[21]

In fine, doubt must be thrown upon the value of education that operates simply to increase the content of the conscious. The moral philosopher of Dotheboys Hall was mistaken; it is when a boy does a thing, that he goes and learns it. The reverse of the half-truth, that "what people don't know doesn't hurt them," is that what people do know often fails to help them.[22] The char-

[20] "Der Sexualwiderstand," *Jahrb. f. psa. u. psp. Forsch.*, 5 (1913), 442–452.

[21] The reader familiar with Jung's words [*Jahrb. f. psa. u. psp. Forsch.* 3 (1912), 186–187] may be interested to compare them with some sentences from H. G. Wells' "Time Machine": "Ages ago, thousands of generations ago, man had thrust his brother man out of the ease and sunlight of life. And now that brother was coming back — changed. Already the Eloi had begun to learn one old lesson anew. They were becoming acquainted again with Fear." (Ch. IX.)

[22] "And the God that you took from a printed book be with you, Tomlinson!"

acteristics of practice partly illustrate this. The most perfect conscious imagery of the keyboard does not avail to operate the typewriter. How often does the operator tell us that if she "thinks where the keys are" she makes a mistake? The skillful typist or marksman does his work without "knowing" what he does, without having the actions represented in consciousness. The correct reactions were represented in consciousness only during the unskillful period of learning. The rôle of consciousness in all active accomplishments diminishes as practice perfects them. In bicycle riding, the right reactions are probably never dependent on consciousness.

A practiced chess player may make the opening move of a game automatically. As the game develops, he will not guard his queen from threatened attack unless he is *aware* of a threat to his queen. When a normal man thus adapts himself rightly to a new situation, the reaction is regularly represented in consciousness. But the awareness that the queen is threatened operates simply to bring ideas into function for protecting the piece; and we saw from Chapter VI that the means he takes to protect his queen are by no means derived wholly from conscious sources. It was also pointed out that, in dissociated states, good adjustments to complicated situations are possible without the mediation of personal consciousness. Nor are similar instances quite lacking in normal life;[23] this very last foothold of consciousness upon mental adjustments grows insecure. Doing the right thing, even if it is a new thing, does not necessarily depend on consciousness of what is right to do, or why it is right.

[23] In the "relational test" of his adult scale, Yerkes makes special provision for subjects who can make the correct reaction in practice, but do not have it formulated in consciousness clearly enough to explain how they do it.

When, therefore, happiness is defined as "the conscious phase of mental adaptation," this does not involve a consciousness of the right thing to do. It means that the consciousness which supervenes on doing the right thing is a happy one. It need not be a consciousness of what has been done. The well-being that results from good digestion is the conscious phase of its proper procedure, but gives no knowledge of what has become of the food.

The condition of mental adaptation is a right system of behavior-patterns. The functioning of these gives happiness whether they themselves are represented in consciousness or not. "The representation in consciousness of the generally best adapted reactions," is a pragmatic definition of truth. In the sense that consciousness is often a necessary forerunner of correct reactions, it is the truth that makes us free. But how often have the prototypes and successors of Galileo and Jenner shown that the truth makes no one free who is not free to perceive the truth? The Florentine astronomer could not acknowledge the satellites of Jupiter, because he already had contrary illusions that meant too much to his peace of mind. As a simple mistake, having no value to him *per se,* it would easily be corrected by the contrary evidence. An illusion is an error that balances some need in one's life, and is fought for desperately until that need is otherwise filled. The truth is only to those whose mental balance is already maintained in freedom from illusions.

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